NIAGARA CONOIDAL FANS

CATALOG 201

BUFFALO FORGE COMPANY
BUFFALO, N.Y.

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BUFFALO NIAGARA CONOIDAL FANS

(TYPE N)

BUFFALO FORGE COMPANY

BUFFALO, N. Y.

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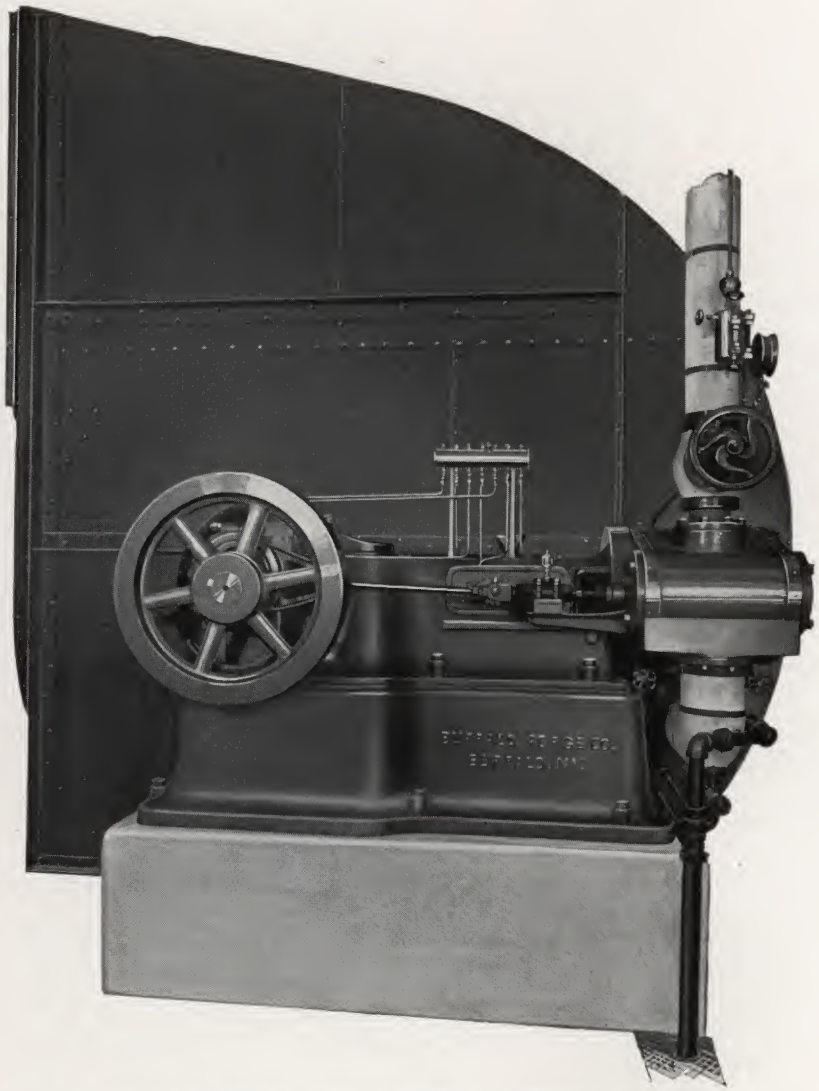
THE CANADIAN BUFFALO FORGE CO., Ltd.

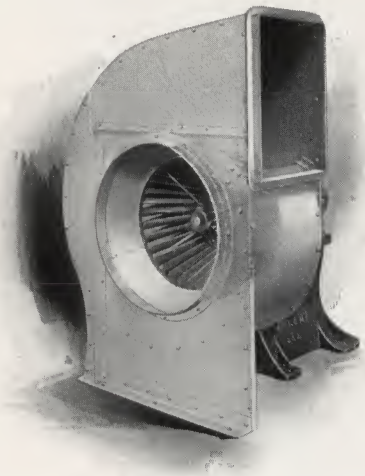
BERLIN, ONTARIO



No. 19 Niagara Conoidal Fan and 18 x 12 Low Pressure Buffalo Engine

NIAGARA CONOIDAL (TYPE N) FANS

The strongest and most efficient commercial fan on the market today for heating, ventilating, drying and mechanical draft work is unquestionably the Niagara Conoidal Type "N" multiblade fan. The proof of this statement has been afforded repeatedly by guarantees made and tests performed on actual installations where Niagara Conoidal fans were able to do the same work with less power and with less noise than other makes. The best proof of superior strength is that aside from the obviously greater rigidity of design, Niagara Conoidal fans are now operating continuously and successfully



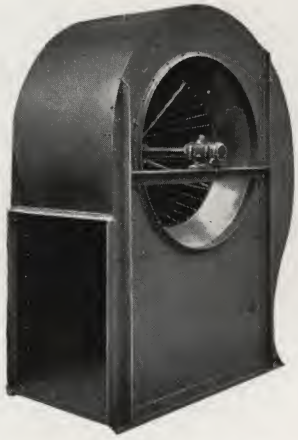
where they have replaced other multiblade fans with narrow blades and weak bracing, which have gone to pieces in service.

The Niagara Conoidal fan derives its name from the prevalence of conical shapes and surfaces in its design. There is a cone inlet in the housing, the individual blades are sections of a conical surface and both the inner and the outer edges of the blades instead of being parallel to the shaft form frustums of cones.

The efficiency of any fan depends to a large extent on the correct proportioning of the various parts, especially diameter and width of blast-wheel, size and position of outlet opening, size of inlet and proper design of housing. Multiblade fans have shorter blades than the older type of steel plate fans, and the **static** pressure due to the wheel, which depends on the radial depth of

the blade, is small relative to the velocity pressure at the tip of the wheel. To convert this velocity pressure into static head greater dependence must be placed on the proper shape of the housing in order to obtain the best efficiencies of which this type of fan is capable.

In order to emphasize the advantages of compactness and reduction in headroom, fans of the multiblade type have been built with restricted casings, which, though handling large air quantities, require more power than the ordinary steel plate fan. Circumstances may make space more important than horsepower but for the usual installation it is much more desirable to obtain the best possible efficiency by using a modified casing suitable



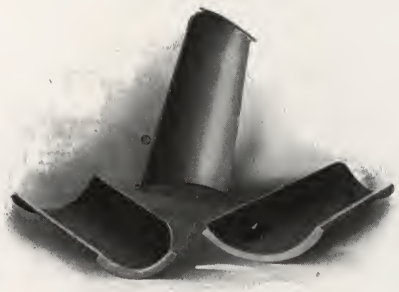
Full Housing Niagara Conoidal Fan, Left-Hand Bottom Horizontal Discharge, for Overhung Pulley or Direct Connection

for handling the large volumes dealt with even at a small increase in dimensions. Obviously the outlet of the housing should be 100% effective, i. e., the velocity should be as nearly uniform as possible at all points and as mere size is no advantage, the increase of outlet area by dropping the inner edge nearer to the center of the fan housing is of little use. In the Niagara Conoidal fan the modified housing forms a cone corresponding to the evasé chimney of certain types of mine ventilating fans in which the air is brought to a comparatively low velocity and a large portion of the velocity pressure is made available, which with other types of fans is necessarily lost by shock and eddy currents at or immediately beyond the fan outlet. This peculiar

form of housing produces velocities which are nearly uniform across the entire face of the outlet.

Many tests were made on various sizes of Niagara Conoidal fans with different designs of housings and it was found that the greatest possible conversion of velocity head at tip of blades into static pressure at fan outlet was obtained by making the inner edge of the outlet approximately tangent to the periphery of the wheel and the height of the outlet approximately equal to the wheel diameter. Our standard guarantee is that static pressure of air issuing from any part of the fan outlet as measured by a pitot tube is not more than 15% above or below the average static pressure.

The Niagara Conoidal fan is especially adapted to handle a large volume of air at a comparatively low pressure when running at a moderate speed. As



Wheel Blades

will be seen from the following description this is the only fan which is designed and constructed with a thorough understanding of all of the factors contributing to the high efficiency of this class of fans.

In multiblade fans a high suction is produced at the fan inlet and this tends to draw the air in at almost a right angle to the back or drive side. When the air strikes the back plate it is deflected toward the blades and outlet at almost 90° and naturally this sudden change of direction causes a loss of velocity and power. Also a large part of the air will be taken up by the rear part of the blade, the front part will not handle its proper proportion and an uneven pressure will be produced at the fan outlet, resulting in eddy currents which materially reduce the fan efficiency. The Niagara Conoidal Type "N" fan is so designed as to entirely overcome these difficulties.

The blades are narrow at the front and increase in width toward the back. This provides a large, unobstructed inlet. The hub, which is conical,

Back Plate and Hub

deflects the air towards the blades without an abrupt change in direction and consequently without loss of power.

The inner or back edge of the blade extends from the base of the conical hub to the outside of the supporting disk to which the hub is riveted. The diameter of the wheel is smaller at the back than at the front and the blade wider so as to offset the slower speed, the design being so proportioned as to tend to equalize volume and pressure over the entire length of the blade.

However, the need of careful design does not end here. As the air is taken up and delivered at different speeds along the entire length of the blade, it is very important that the curvature of the blade should vary to meet the exact conditions existing at any point. On the inlet side the curve of the blade is sharpest nearest the intake where the velocity is the highest and this curve decreases toward the back, with the result that the air is scooped up noiselessly and without impact at an angle accurately proportioned to the actual speed of the blade. The curvature of the blade is such that at normal or rated capacity the air will leave the tip with a velocity pressure approximately twice the pressure corresponding to the peripheral velocity of the wheel in order to reduce the required speed of rotation. In the same way the outlet angle is sharpest at the intake where the diameter is the greatest and the static pressure is considerably increased at this point compared with any other multiblade fan.

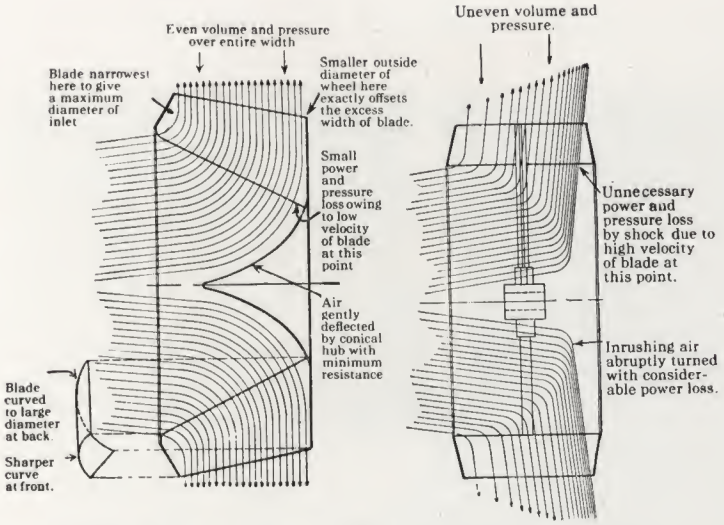
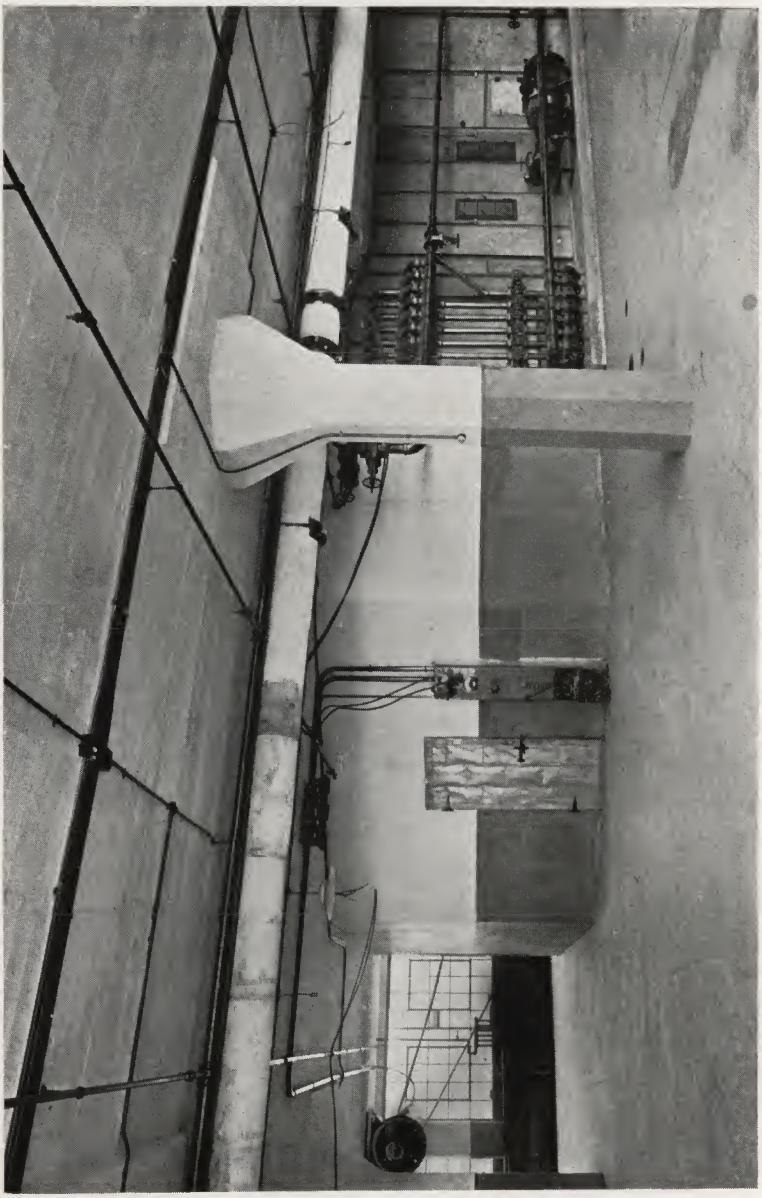


Diagram Showing Advantages of Niagara Conoidal over other Multiblade Fans in Handling Air

The theoretical efficiency of multiblade fans is often materially reduced by deflection of the narrow blades when operated at a moderately high speed. This defect which is very common is entirely overcome by the peculiar shape of the Niagara Conoidal blade, which is strong and rigid without the use of excessively heavy material.

From this brief description it is evident that the success and high efficiency of the Niagara Conoidal fan depends to a great extent on correct proportioning of all the various parts. Extensive tests have been made on the entire line of Niagara Conoidal fans and this company guarantees that the capacity, speed and horsepower tables given in this catalog are accurate and reliable.



Ford Motor Company. One of the five installations with Niagara Conoidal Fans for the machine shop. Capacity of this unit 168,400 cubic feet of air per minute

DETAILS OF CONSTRUCTION

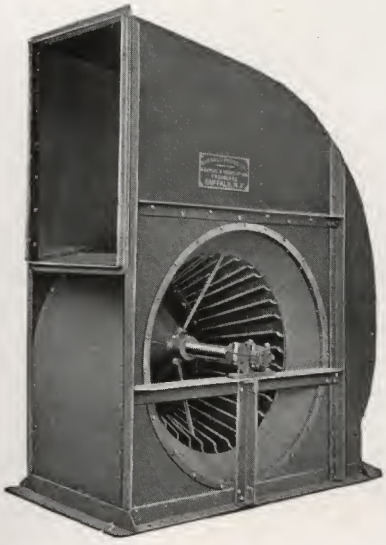
WHEEL

The blast-wheel has 32 forward curved blades which are riveted at the front or inlet end to a conical flange and at the back to an extra heavy boiler plate disk or back plate. The peculiar shape of the blades affords a large riveting surface and consequent rigid support.

The hub is a one-piece casting curved and sloping toward the inlet of the wheel to deflect the entering air to the blades with the least resistance and loss in power. It is attached to the shaft by key and set screws and at the back widens out into a disk which is hot-riveted to the back plate.

Four forged tie rods are screwed into the hub and are attached to the conical flange at the inlet edge of the wheel. These rods are placed at an angle to the inlet which offers the least resistance to the entering air.

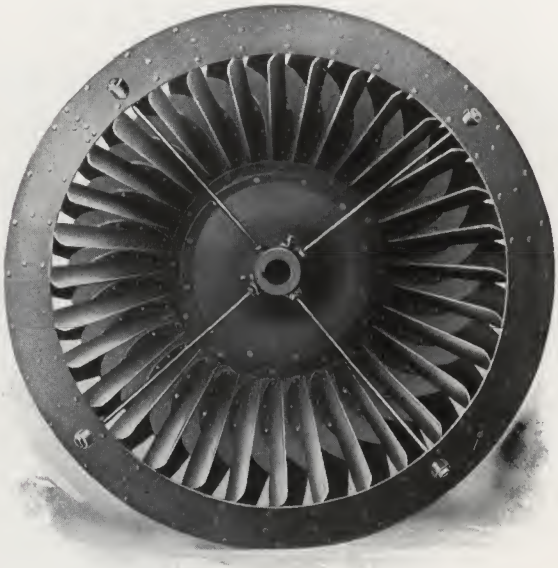
Niagara Conoidal Wheel



Three-Quarter Housing Niagara Conoidal Fan, Left-Hand Top Horizontal Discharge, for Overhung Pulley or Direct Connection

HOUSING

The housing is of modified shape as previously described, constructed of heavy steel plate with riveted lap seams and braced with vertical and horizontal angle irons. It is supported on a heavy angle iron base frame drilled for holding-down bolts. The inlet is fitted with a cone in the space between the housing side-sheet and blast-wheel and has a minimum clearance with the inlet flange of the blast-wheel. The inner edge of the outlet opening is appoximately tangent to periphery of wheel and height of outlet approximately equal to wheel diameter.



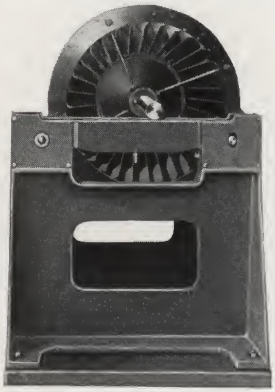
Niagara Conoidal Wheel, Inlet Side

SHAFT

Shaft is of open hearth steel, extra heavy, with a large factor of safety and accurately ground to size.

BALANCE

All fan wheels are given a standing balance by a special device which insures as accurate a degree of balance as is possible with any method of rotating balance. Wheel and shaft are assembled and mounted on a perfectly smooth surface, which is leveled on knife edge supports. The wheel is then balanced until it is absolutely stationary in whatever position it may be put.



Balancing Machine

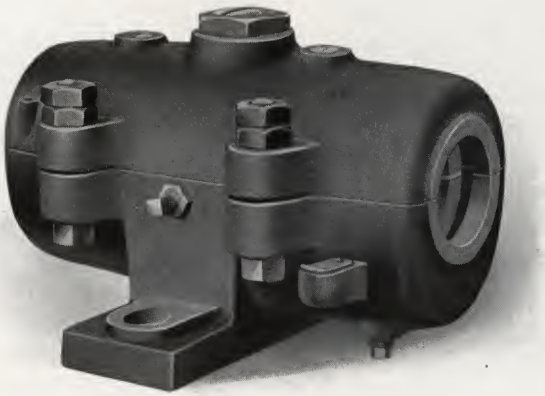
All high speed blast-wheels are in addition given a running balance on a specially designed machine using a system similar to that employed for balancing automobile engines and high speed grinding wheels.

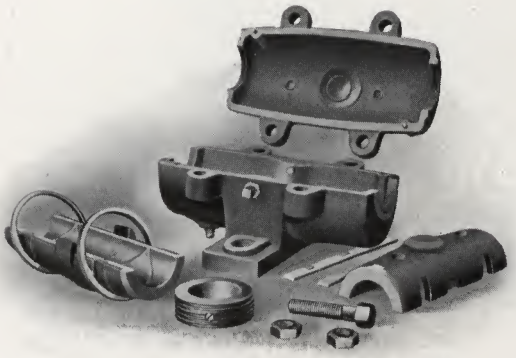
Great care is taken in the design of the entire fan to insure proper strength, weight and balance, so as to secure a practically vibrationless machine.

BEARINGS

Bearings are dust proof and oil tight and consist of a split sleeve lined with babbitt and completely encased in the bearing housing. The two halves of the sleeve are mounted between spherical surfaces which allow the bearing to adjust itself in every direction and the housing provides a large oil reservoir in which two oil rings dip; over-filling of the bearing is prevented by the position of the opening through which the oil is supplied and which also indicates the oil level.

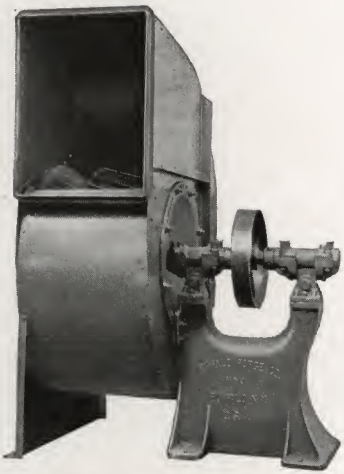
In the interest of safety the thrust collar is placed inside the bearing housing, running against a babbitted shoulder; grooves on the outside surface of the thrust collar throw off all oil and absolutely prevent it from creeping along the shaft and being drawn into the fan.





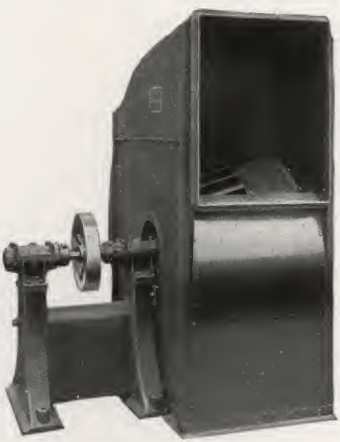
PULLEY TYPE FANS

Pulley driven fans are built with either an overhung pulley or an overhung wheel as shown by the accompanying illustrations, the former being standard. With overhung pulley, the blast-wheel is mounted between bearings supported by the fan housing. The overhung wheel is used where a free and unobstructed inlet is desired; in this type, both bearings are on the same side of the fan: No. 6 and smaller fans have both bearings mounted on one pedestal, while No. 7 to No. 13 have two pedestals which are rigidly connected.



No. 3 to No. 6 Niagara Conoidal Fan, Overhung Blast-Wheel, Right-Hand Top Horizontal Discharge

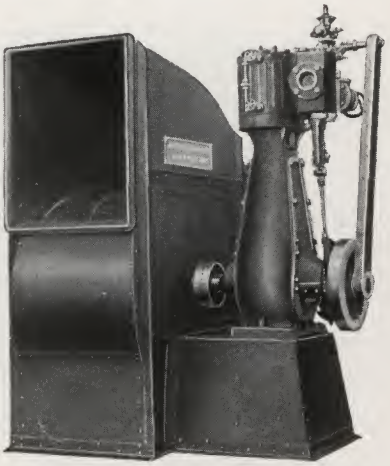
Full Housing Niagara Conoidal Fan, Overhung Pulley, Left-Hand Up Discharge



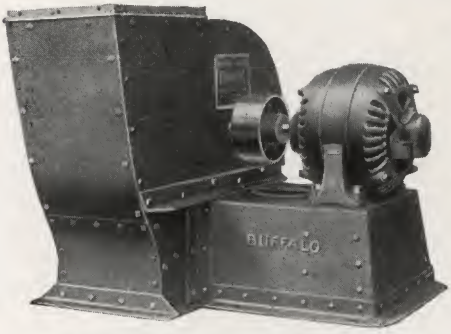
No. 7 to No. 13 Niagara Conoidal Fan, Overhung Blast-Wheel, Left-Hand Top Horizontal Discharge

DIRECT CONNECTED FANS

Niagara Conoidal Type "N" fans may be furnished either direct connected to a steam engine or to an electric motor, the engine drive conveniently permitting wide speed variation. This company has a completely equipped engine department, making no less than nine distinct types, many of which have been designed especially for fan service.



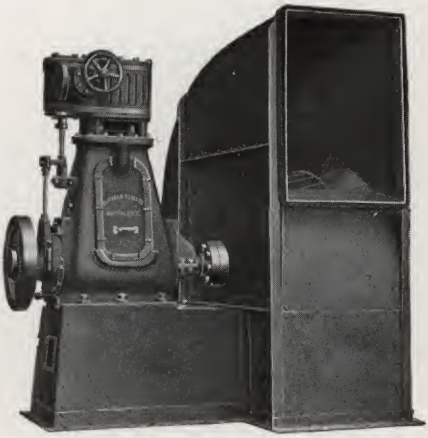
Full Housing Niagara Conoidal Fan, Right-Hand Top Horizontal Discharge and Class "A" Engine



Full Housing Niagara Conoidal Fan, Right-Hand Up Discharge and Electric Motor

When sufficient pressure is not available, or location is such that apparatus requiring minimum attention is required, motor drive affords the solution.

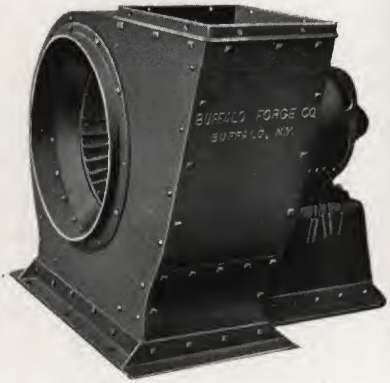
For fans direct connected to either motors or engines, a steel plate base attached to the fan housing may be used, or the fan and motor or engine mounted on separate concrete foundations.



Full Housing Niagara Conoidal Fan, Left-Hand Top Horizontal Discharge and D. V. D. A. Engine

Where separate foundations are not used the bases are rigidly attached to the fan housings and are of box construction, tapering to a broad base and finished off with heavy angle iron. The base is stiffened across the interior with steel ribs and is made with corners rounded so as to avoid an unfinished appearance.

Motor driven exhausters may have the fan wheel overhung on the motor shaft, which is extended for this purpose, or a coupling may be used, with an outboard bearing. Flexible couplings are supplied when conditions make it advisable and require two bearings for the fan shaft.



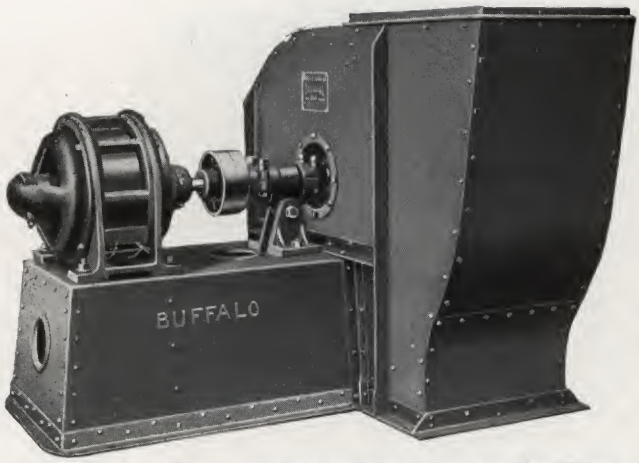
Right-Hand Up Discharge Niagara Conoidal Fan, Wheel Overhung on Motor Shaft

DOUBLE WIDTH FANS

Double width Niagara Conoidal fans are furnished either for pulley drive or direct connection. These fans consist of two single inlet wheels mounted back to back in the same housing, this construction being much stronger than a single wheel of double the usual width. They are not furnished with overhung wheels.

Double Width Niagara Conoidal Fan, Right-Hand Top Horizontal Discharge with Suction Inlet Boxes

For the same conditions double width fans will deliver twice the rated capacity of the single fans and for the same capacity and pressure require about one-third less headroom.



Full Housing Niagara Conoidal Fan and Motor, Overhung Blast-Wheel, Left-Hand Up Discharge

Niagara Conoidal Fan, Right-Hand Top Angular Discharge

Niagara Conoidal Fan, Left-Hand Top Angular Discharge

BABY CONOIDAL FANS

The Baby Conoidal fan is of the high efficiency multiblade type with blast-wheel of the same design as the Niagara Conoidal (Type N). Housing is cast iron and can be swung around to discharge in any desired direction. This fan furnishes a large volume of air at a relatively low pressure with moderate speed. The wheel is accurately balanced assuring a smooth running, noiseless machine; its "hum" is almost inaudible.

It is unexcelled for all kinds of drying and cooling purposes, for supplying fresh, cool air to offices, homes, staterooms, telephone booths, etc. and for exhausting smoke, fumes and foul air from kitchens, restaurants, lavatories, etc.

Cord and plug are furnished with No. 3 and smaller; no expense for installing, simply attach to an electric light socket. Outfits are furnished with 110 or 220 volt D. C. motors and 110 or 220 volt, single phase, 60 cycle A. C. motors. Nos. 4, 5, and 6 are also furnished with 110 or 220 volt, 2 or 3 phase, 60 cycle motors.

No. 1

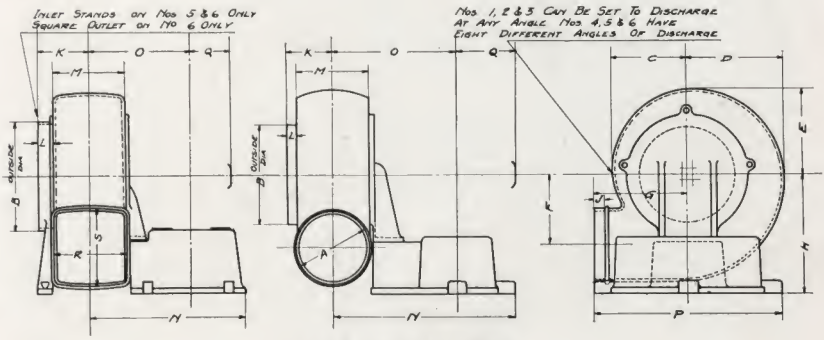
No. 2

No. 3

50% -

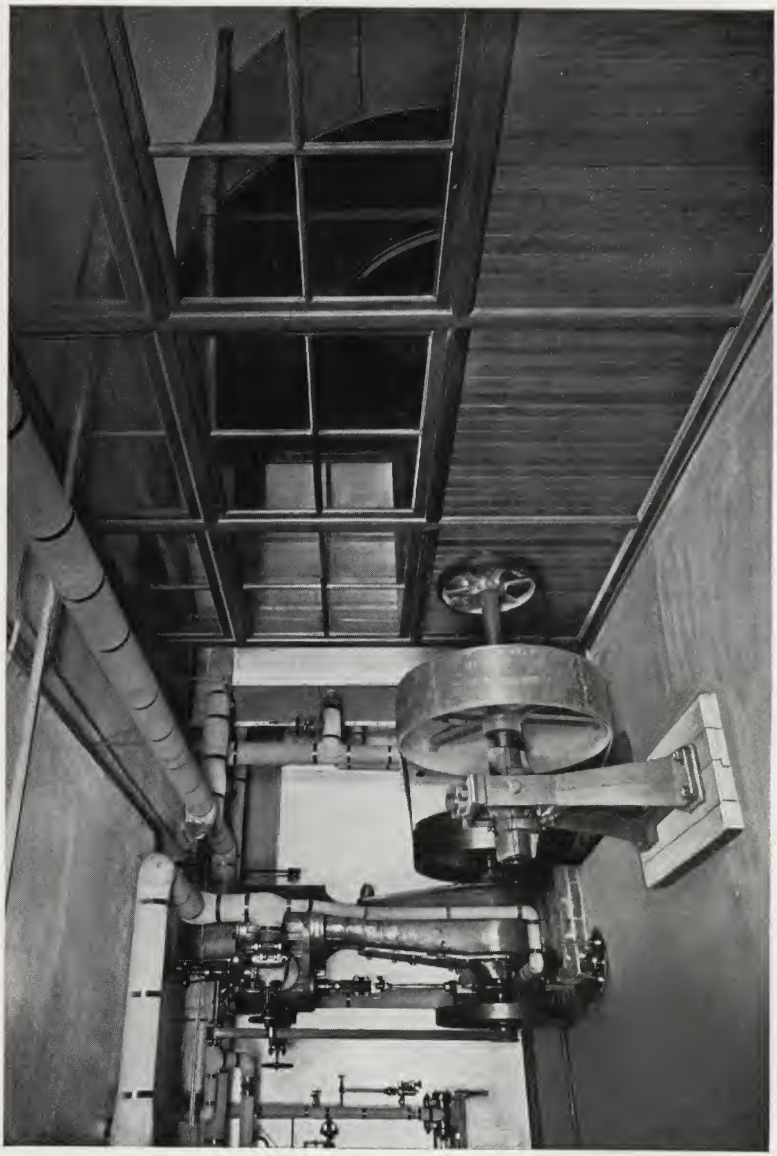
CAPACITIES OF BABY CONOIDAL FANS

Size No.	Cu. Ft. Air per Minute	H. P. Motor	R. P. M.	Weight, Lbs.
1	90	1/30	1740	40
2	250	1/8	1740	55
3	325	1/8	1140	110
3	500	1/4	1740	115
4	690	1/4	870	450
4	900	1/2	1140	475
4	1400	1 1/2	1740	500
5	1100	1/2	690	625
5	1400	3/4	870	650
5	1800	1 1/2	1140	675
6	1800	1	690	850
6	2400	2	870	875
6	3100	3	1140	900



Dimensions in Inches

Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S
1	3	4	3	3 7/8	3 7/16	2 15/16	3 3/4	4 3/4	7/16	1 13/16	3/8	2 7/8	6 15/16	5	7 1/2	3		
2	4	5 1/2	3 21/32	4 29/32	4 9/32	3 3/4	4 3/4	6 1/4	5/8	2 1/2	9/16	3 7/8	8 7/16	6 15/16	8 3/4	3		
3	5 3/4	7 3/4	5 3/16	7 1/16	6 1/8	5 7/16	6 1/2	8 3/4	3/4	3 5/16	11/16	5 1/4	10 1/8	7 7/8	10 1/4	5		
4	8 3/4	11 3/8	7 9/16	10 7/8	9	7 5/8	10	13	2	6	2	8						
5	10 7/8	14 1/4	9 3/8	12 7/8	11 1/8	9 3/8	11	16	2	7 11/32	2 3/8	9 15/16						
6		17 1/2	11 3/16	15 7/16	13 5/16	11 3/8	11 1/2	19	2	8 3/8	2 1/2	11 3/4					11 5/8	12 3/8

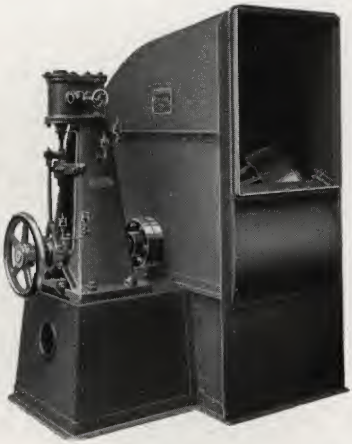


No. 11 Niagara Conoidal Fan and 16 x 10 Class "A" Engine at Bridesburg School, Philadelphia, Pa.

STANDARD ARRANGEMENTS

In ordering fans, specify hand, discharge, type of drive, whether overhung pulley or overhung wheel is wanted, full or three-quarter housing, etc. See page 48.

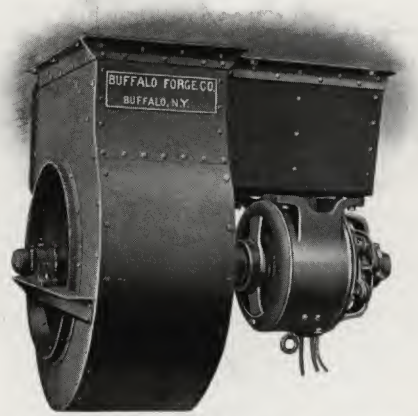
The "hand" of a fan is determined by the location of the drive side when one stands facing the outlet end of the fan. If the pulley, motor or engine is on the left, it is called "left hand"; if on the right, "right hand."



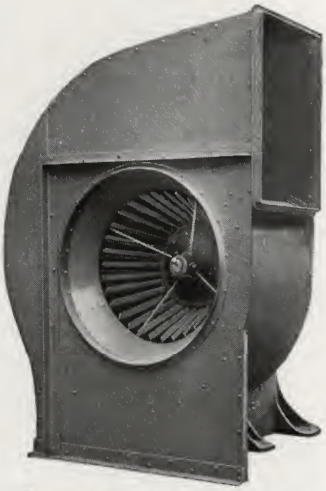
Full Housing Niagara Conoidal Fan, Left-Hand Top Horizontal Discharge and Class "O" Engine

Full Housing Niagara Conoidal Fan, Left-Hand Up Discharge and Class "I" Engine

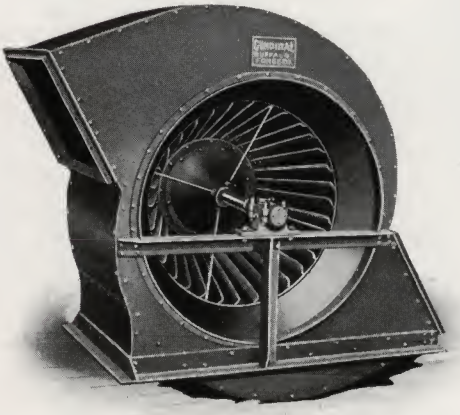
Dimension tables on pages 49 to 63 show standard positions of discharge openings but special position of openings can be furnished if desired and housing can be constructed with two outlets to discharge air in different directions.



Full Housing Niagara Conoidal Fan, Left-Hand Top Horizontal Discharge when Suspended from Ceiling



No. 3 to No. 6 Niagara Conoidal Fan, Overhung Blast-Wheel, Right-Hand Top Horizontal Discharge



Double Discharge Niagara Conoidal Fan, Left-Hand Angular Down Discharge and Right-Hand Angular Up Discharge

PERFORMANCE AND APPLICATION

As will be seen from the characteristic curve of Niagara Conoidal Type "N" fans on page 43, pressure does not build up as capacity falls off, which makes this fan especially adaptable for cases where an increased air quantity is wanted as pressure increases, or vice versa, as in the case of heating and ventilating where one wing of a building is closed off. In this case it may not be convenient to change the speed and this fan will show only a slight increase in velocity through the ducts which remain open, due to the increased resistance. Likewise these fans are very suitable for forced draft and similar work, they occupy comparatively small space and are used to advantage on boats or in places where space is limited.

In public building work in order to insure quietness of operation the velocity of air at fan outlet should be kept at about 1800 ft. per minute with a maximum allowable velocity of 2200 ft. For industrial installations or where quietness of operation is not essential outlet velocities as high as 4000 ft. per minute may be used.

Capacity tables for both total and static pressures are given on pages 28 to 42. Total pressure tables give speeds, capacities and horsepowers when fan is working at its most efficient point. Static pressure tables give speeds, capacities and horsepowers on both sides of the point of maximum efficiency at outlet velocities of 1300 to 4000 ft. per minute. It will be seen from these static pressure tables that the Niagara Conoidal Type "N" fan gives a wide range of capacities at constant static pressure with but little variation in speed and but slight change in total efficiency.

To illustrate the use of the static pressure tables we may assume a case where 17000 cu. ft. of air per minute is wanted against a static pressure of one inch. By referring to the tables we find that we can use a No. 6 at 419 R. P. M., 6.59 H. P., and 3200 ft. outlet velocity per minute; a No. 7 at 332 R. P. M., 5.19 H. P., and 2400 ft. outlet velocity per minute; or a No. 8 at 291 R. P. M., 4.86 H. P., and 1800 ft. outlet velocity per minute. Thus if quietness of operation is essential or power is an important factor the No. 8 fan should be used. If quietness of operation is not essential as in an industrial installation and first cost is an important consideration, the No. 7 or No. 6 fan may be used.

A point difficult of comprehension to those familiar with the characteristics of straight blade fans is that apparently the tables for static pressures

show two capacities for each fan with the same speed and when discharging against the same pressure. For example a No. 5 Type "N" fan will deliver either 5470 cu. ft., or 10200 cu. ft. per minute at 480 R. P. M. at 1″ static pressure. This is due to the peculiar characteristic curve of Niagara Conoidal fans, which shows a static pressure increasing with the capacity up to a point which is a little below the normal rating and then falling off again. Since this is the case, the reverse is true, i. e., at a point either above or below the capacity which corresponds to the maximum static pressure, the revolutions per minute must be increased in order to develop the same amount of pressure. This does not mean that the No. 5 fan will deliver either 5470 or 10200 cu. ft. of air at 480 R. P. M. through the same system of ducts, for the resistance of the system varies according to the well known law, directly as the square of the velocity and the system offering a resistance of 1″ against the flow of 5470 cu. ft. of air per minute would have a resistance of $\left(\frac{10200}{5470}\right)^2 \times 1'' = 3.48''$, if the volume handled per minute were increased to 10200 cu. ft.

For each different pressure there is a certain air quantity which the fan will deliver with its best efficiency and there is a certain speed at which it should run; it will deliver more or less air against the same resistance but not with the same efficiency and not at the same speed. The steel plate fan with few blades will run slower for a reduced capacity but the multiblade type of fan, in which the maximum static pressure occurs at a point slightly below the capacity corresponding to the maximum efficiency, has to run faster in order to maintain the same static pressure whenever the volume delivered is either decreased or increased. This explains why there is a minimum speed in the capacity tables for each pressure, and since the maximum efficiency corresponds closely to this minimum speed, or, to speak more correctly, occurs at a capacity about 15% greater than that corresponding to the minimum speed, it aids greatly in the selection of the proper size of fan in cases where the volume to be handled is known and the frictional resistances of the system estimated by the usual methods.

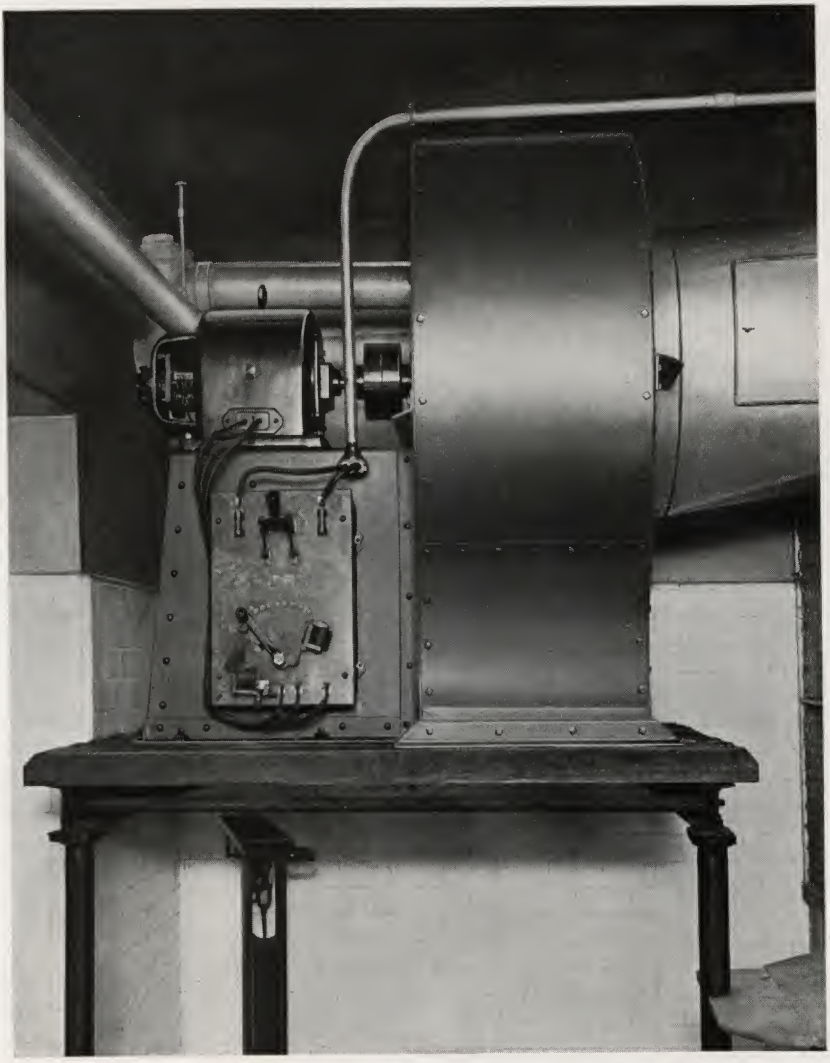
These tables will not be found confusing if it is borne in mind that the amount of air delivered by any fan at a given speed is governed absolutely and entirely by the frictional resistance of the system, which should be carefully estimated beforehand, since multiblade fans as a type are much more sensitive to changes in resistance than the older types.

In the complete tables static pressures are used, since the resistances are estimated in terms of static pressure, but for convenience and also because total pressures are available in many cases, as when fans discharge directly into ducts with no reduction in velocity, we include in this catalog tables showing the normal capacities at which best efficiencies are obtained in the case of each size fan and at various total pressures. The static pressure developed by a Niagara Conoidal fan is 77½% of the total pressure at maximum efficiency rating, but since a portion of the velocity head is usually converted into static pressure and thereby made available, it should be included in estimating the efficiency of the system as a whole. The extent of this conversion of velocity pressure into static pressure depends on the outlet duct and should not be credited to the fan.

No. 3 to No. 6 Niagara Conoidal Fan, Right-Hand Up Discharge

A No. 17 Niagara Conoidal double width fan on the roof of Delray Power Station, Edison Illuminating Company, Detroit, Mich. Used in connection with Carrier humidifiers for cooling generator room.

Fans, heaters and air washers from the Buffalo Forge Company for the world's largest hotel, the new "McAlpin," New York City. Seventeen fans in this building deliver 22,000,000 cubic feet of air per hour.



Kitchen Exhaust Fan,
Manufacturers Club, Philadelphia, Pa.

CAPACITIES OF NIAGARA CONOIDAL (TYPE N) FANS UNDER AVERAGE WORKING CONDITIONS AT 70° F. AND 29.92 INCHES BAROMETER

Fan No.	Mean Dia. of Blast-Wheel	Area of Outlet Sq. Ft.	3/8" Total Press. or 0.217 Oz.			1/2" Total Press. or 0.288 Oz.			5/8" Total Press. or 0.360 Oz.			3/4" Total Press. or 0.433 Oz.		
			Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.
3	15¾"	1.31	413	1490	0.13	478	1720	0.19	533	1930	0.27	585	2110	0.35
3½	18¼"	1.79	354	2030	0.17	409	2350	0.26	457	2620	0.37	501	2870	0.48
4	21"	2.33	310	2650	0.22	358	3070	0.34	400	3430	0.48	439	3750	0.63
4½	23½"	2.95	276	3360	0.28	318	3880	0.43	356	4340	0.60	390	4750	0.80
5	26"	3.64	248	4150	0.35	287	4790	0.53	320	5350	0.74	351	5870	0.98
5½	28¾"	4.41	225	5020	0.42	260	5800	0.65	291	6470	0.90	319	7100	1.19
6	31½"	5.25	207	5970	0.50	239	6900	0.77	267	7710	1.07	292	8450	1.41
7	36½"	7.14	177	8130	0.68	205	9400	1.05	229	10490	1.46	251	11500	1.92
8	42"	9.33	155	10610	0.89	179	12260	1.37	200	13700	1.91	219	15020	2.51
9	48"	11.81	138	13450	1.12	159	15520	1.73	178	17340	2.41	195	19000	3.18
10	52"	14.58	124	16580	1.39	143	19160	2.14	160	21400	2.98	175	23460	3.93
11	57½"	17.64	113	20070	1.68	130	23180	2.58	146	25900	3.60	160	28390	4.75
12	63"	21.00	104	23880	2.00	119	27590	3.08	133	30820	4.29	146	33780	5.65
13	68"	24.65	95	28040	2.35	110	32370	3.61	123	36180	5.03	135	39650	6.63
14	73"	28.56	89	32520	2.72	102	37550	4.19	114	41950	5.84	125	45990	7.69
15	78¼"	32.81	83	37330	3.13	96	43100	4.80	107	48160	6.70	117	52790	8.83
16	83½"	37.33	78	42470	3.56	90	49040	5.47	100	54790	7.62	110	60060	10.10
17	89"	42.14	73	47950	4.01	84	55370	6.17	94	61860	8.60	103	67800	11.40
18	94"	47.25	69	53750	4.49	80	62060	6.92	89	69340	9.64	98	76010	12.70
19	99"	52.65	65	59890	5.00	75	69160	7.71	84	77260	10.80	92	84700	14.20
20	105"	58.33	62	66360	5.56	72	76640	8.54	80	85600	11.90	88	93850	15.70

Static Pressure is 77½% of Total Pressure

CAPACITIES OF NIAGARA CONOIDAL (TYPE N) FANS UNDER AVERAGE WORKING CONDITIONS AT 70° F. AND 29.92 INCHES BAROMETER

Fan No.	Mean Dia. of Blast-Wheel	Area of Outlet Sq. Ft.	⅞″ Total Press. or 0.505 Oz.			1″ Total Press. or 0.577 Oz.			1¼″ Total Press. or 0.721 Oz.			1½″ Total Press. or 0.865 Oz.		
			Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.
3	15¾″	1.31	631	2280	.44	675	2440	.54	755	2730	.76	827	2990	1.00
3½	18¼″	1.79	541	3100	.60	579	3320	.74	647	3710	1.04	709	4060	1.37
4	21″	2.33	473	4050	.79	506	4340	.97	566	4850	1.35	620	5310	1.78
4½	23½″	2.95	420	5120	1.00	450	5490	1.22	503	6130	1.71	551	6720	2.25
5	26″	3.64	378	6330	1.23	405	6770	1.51	453	7570	2.11	496	8300	2.77
5½	28¾″	4.41	344	7660	1.49	368	8200	1.83	412	9160	2.56	451	10040	3.36
6	31½″	5.25	315	9110	1.77	338	9750	2.17	378	10930	3.04	414	11940	4.00
7	36½″	7.14	270	12400	2.41	289	13280	2.96	324	14840	4.14	354	16260	5.44
8	42″	9.33	237	16200	3.15	253	17340	3.87	283	19390	5.41	310	21240	7.10
9	48″	11.81	210	20500	3.99	225	21950	4.89	252	24530	6.85	276	26880	8.99
10	52″	14.58	189	25310	4.92	203	27090	6.04	227	30290	8.45	248	33180	11.10
11	57½″	17.64	172	30620	5.96	184	32780	7.31	206	36650	10.20	226	40150	13.40
12	63″	21.00	158	36440	7.09	169	39010	8.70	189	43620	12.20	207	47770	16.00
13	68″	24.65	146	42760	8.32	156	45780	10.20	174	51180	14.30	191	56070	18.80
14	73″	28.56	135	49600	9.65	145	53100	11.80	162	59370	16.60	177	65030	21.80
15	78¼″	32.81	126	56940	11.10	135	60960	13.60	151	68160	19.00	165	74650	25.00
16	83½″	37.33	118	64780	12.60	127	69360	15.50	142	77540	21.60	155	84940	28.40
17	89″	42.14	111	73140	14.20	119	78300	17.50	133	87540	24.40	146	95900	32.10
18	94″	47.25	105	81990	16.00	113	87780	19.60	126	98140	27.40	138	107500	36.00
19	99″	52.65	100	91350	17.80	107	97800	21.80	119	109340	30.50	131	119780	40.10
20	105″	58.33	95	101220	19.70	101	108370	24.20	113	121160	33.80	124	132710	44.40

Static Pressure is 77½% of Total Pressure

CAPACITIES OF NIAGARA CONOIDAL (TYPE N) FANS UNDER AVERAGE WORKING CONDITIONS AT 70° F. AND 29.92 INCHES BAROMETER

Fan No.	Mean Dia. of Blast-Wheel	Area of Outlet Sq. Ft.	1¾" Total Press. or 1.010 Oz.			2" Total Press. or 1.154 Oz.			2¼" Total Press. or 1.298 Oz.			2½" Total Press. or 1.442 Oz.		
			Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.
3	15¾"	1.31	893	3230	1.26	955	3450	1.54	1013	3660	1.84	1067	3860	2.15
3½	18¼"	1.79	766	4390	1.71	818	4690	2.09	868	4980	2.50	915	5250	2.93
4	21"	2.33	670	5740	2.24	716	6130	2.73	760	6500	3.26	801	6850	3.82
4½	23½"	2.95	596	7260	2.83	636	7760	3.46	675	8230	4.13	712	8670	4.83
5	26"	3.64	536	8960	3.49	573	9580	4.27	608	10160	5.09	640	10710	5.96
5½	28¾"	4.41	487	10840	4.23	521	11590	5.17	552	12290	6.17	582	12960	7.22
6	31½"	5.25	447	12900	5.03	477	13790	6.15	506	14630	7.34	534	15420	8.59
7	36½"	7.14	383	17560	6.85	409	18770	8.37	434	19910	9.99	458	20990	11.70
8	42"	9.33	335	22940	8.95	358	24520	10.90	380	26010	13.10	400	27410	15.30
9	48"	11.81	298	29030	11.30	318	31020	13.80	338	32920	16.50	356	34700	19.30
10	52"	14.58	268	35840	14.00	286	38310	17.10	304	40640	20.40	320	42840	23.90
11	57½"	17.64	244	43370	16.90	260	46360	20.70	276	49180	24.70	291	51800	28.90
12	63"	21.00	223	51610	20.10	239	55170	24.60	253	58510	29.40	267	61680	34.40
13	68"	24.65	206	60560	23.60	220	64730	28.90	234	68670	34.40	246	72380	40.30
14	73"	28.56	191	70250	27.40	205	75090	33.50	217	79650	40.00	229	83950	46.80
15	78¼"	32.81	179	80640	31.50	191	86200	38.40	203	91420	45.90	214	96380	53.70
16	83½"	37.33	168	91760	35.80	179	98060	43.70	190	104030	52.20	200	109660	61.10
17	89"	42.14	158	103590	40.40	169	110720	49.40	179	117450	58.90	188	123800	69.00
18	94"	47.25	149	116120	45.30	159	124110	55.30	169	131660	66.00	178	138770	77.30
19	99"	52.65	141	129380	50.50	151	138280	61.70	160	146690	73.60	169	154620	86.20
20	105"	58.33	134	143360	55.90	143	153250	68.30	152	162550	81.50	160	171320	95.50

Static Pressure is 77½% of Total Pressure

CAPACITIES OF NIAGARA CONOIDAL (TYPE N) FANS UNDER AVERAGE WORKING CONDITIONS AT 70° F. AND 29.92 INCHES BAROMETER

Fan No.	Mean Dia. of Blast-Wheel	Area of Outlet Sq. Ft.	2¾″ Total Press. or 1.586 Oz.			3″ Total Press. or 1.734 Oz.			3½″ Total Press. or 2.019 Oz.			4″ Total Press. or 2.307 Oz.		
			Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.	Rev.	Vol.	H. P.
3	15¾″	1.31	1120	4040	2.48	1169	4220	2.83	1263	4560	3.56	1350	4880	4.35
3½	18¼″	1.79	960	5500	3.38	1002	5750	3.85	1083	6210	4.85	1157	6640	5.92
4	21″	2.33	840	7190	4.41	877	7510	5.02	947	8110	6.32	1013	8670	7.73
4½	23½″	2.95	746	9100	5.58	780	9500	6.36	842	10260	8.01	900	10970	9.78
5	26″	3.64	672	11230	6.88	702	11730	7.84	758	12670	9.87	810	13550	12.10
5½	28¾″	4.41	610	13590	8.33	638	14190	9.49	689	15330	12.00	736	16390	14.60
6	31½″	5.25	560	16170	9.91	585	16890	11.30	632	18250	14.20	675	19510	17.40
7	36½″	7.14	480	22020	13.50	501	23000	15.40	541	24840	19.40	579	26550	23.70
8	42″	9.33	420	28760	17.60	439	30040	20.10	474	32440	25.30	506	34680	30.90
9	48″	11.81	373	36390	22.30	390	38010	25.40	421	41050	32.00	450	43890	39.10
10	52″	14.58	336	44930	27.50	351	46930	31.40	379	50700	39.50	405	54180	48.30
11	57½″	17.64	305	54360	33.30	319	56780	38.00	344	61330	47.80	368	65560	58.50
12	63″	21.00	280	64700	39.70	292	67570	45.20	316	72990	57.00	338	78020	69.60
13	68″	24.65	258	75920	46.50	270	79300	53.00	292	85650	66.80	312	91560	81.60
14	73″	28.56	240	88060	54.00	251	91970	61.50	271	99340	77.50	289	106200	94.70
15	78¼″	32.81	224	101080	62.00	234	105580	70.60	253	114050	89.00	270	121920	108.70
16	83½″	37.33	210	115000	70.50	219	120130	80.30	237	129750	101.20	253	138700	123.70
17	89″	42.14	198	129840	79.60	206	135620	90.70	223	146490	114.30	238	156600	139.60
18	94″	47.25	187	145550	89.20	195	152020	101.70	211	164110	128.10	225	175550	156.50
19	99″	52.65	177	162170	99.40	185	169400	113.30	200	182970	142.70	213	195600	174.40
20	105″	58.33	168	179700	110.20	175	187680	125.50	190	202720	158.10	202	216720	193.20

Static Pressure is 77½% of Total Pressure

No. 3 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.
1300	1710	0.106	550	.25										
1400	1840	0.122	547	.26	687	.42	810	.59	920	.80	1027	1.00		
1500	1970	0.141	543	.28	680	.43	800	.62	913	.81	1017	1.04		
1600	2100	0.160	547	.31	673	.45	793	.64	903	.84	1007	1.06	1190	1.53
1700	2230	0.180	550	.34	670	.48	783	.66	893	.86	997	1.09	1177	1.58
1800	2360	0.202	553	.37	667	.51	777	.68	883	.89	983	1.12	1167	1.61
1900	2490	0.225	560	.41	667	.54	773	.71	877	.92	977	1.14	1157	1.65
2000	2630	0.250	570	.45	667	.58	770	.75	873	.95	970	1.17	1143	1.68
2100	2760	0.275	580	.50	670	.63	770	.79	867	.99	960	1.22	1133	1.73
2200	2890	0.302	590	.55	677	.68	767	.84	863	1.03	953	1.25	1127	1.76
2300	3020	0.330	600	.61	683	.73	770	.89	860	1.08	950	1.30	1120	1.81
2400	3150	0.360	610	.67	690	.80	773	.95	860	1.13	947	1.35	1107	1.85
2500	3280	0.390	623	.74	700	.86	777	1.03	860	1.20	943	1.41	1103	1.91
2600	3410	0.422	633	.81	710	.94	783	1.09	863	1.26	940	1.47	1097	1.96
2800	3670	0.489	660	.96	730	1.10	800	1.25	870	1.43	943	1.63	1090	2.10
3000	3940	0.560	687	1.14	753	1.29	820	1.44	883	1.61	950	1.81	1087	2.25
3200	4190	0.638	717	1.33	780	1.50	837	1.65	900	1.83	960	2.02	1090	2.47
3400	4460	0.721			807	1.75	863	1.90	920	2.06	980	2.26	1093	2.69
3600	4730	0.810					883	2.18	943	2.34	997	2.53	1107	2.96
3800	4990	0.900									1017	2.84	1117	3.28
4000	5250	1.000											1133	3.60

No. 3½ NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.
1300	2320	0.106	472	.33										
1400	2500	0.122	469	.36	589	.57	694	.81	789	1.08	880	1.36		
1500	2680	0.141	466	.38	583	.59	686	.84	783	1.10	872	1.41		
1600	2860	0.160	469	.42	577	.62	680	.86	774	1.15	863	1.45	1020	2.08
1700	3040	0.180	472	.46	574	.65	672	.89	766	1.17	854	1.48	1009	2.14
1800	3210	0.202	474	.51	572	.69	666	.93	757	1.21	843	1.52	1000	2.19
1900	3390	0.225	480	.56	572	.74	663	.97	752	1.25	837	1.56	992	2.24
2000	3570	0.250	489	.62	572	.79	660	1.02	749	1.30	831	1.59	980	2.29
2100	3750	0.275	497	.68	574	.86	660	1.08	743	1.35	823	1.65	972	2.35
2200	3930	0.302	506	.75	580	.92	657	1.14	740	1.40	817	1.70	966	2.40
2300	4110	0.330	514	.83	586	1.00	660	1.22	737	1.47	814	1.77	960	2.46
2400	4290	0.360	523	.91	592	1.09	663	1.30	737	1.53	812	1.84	949	2.52
2500	4470	0.390	534	1.01	600	1.17	666	1.40	737	1.63	809	1.91	946	2.60
2600	4640	0.422	543	1.10	609	1.27	672	1.48	740	1.72	806	2.00	940	2.67
2800	5000	0.489	566	1.31	626	1.50	686	1.70	746	1.95	809	2.22	934	2.86
3000	5360	0.560	589	1.56	646	1.75	703	1.96	757	2.19	814	2.46	932	3.06
3200	5720	0.638	614	1.81	669	2.05	717	2.24	772	2.49	823	2.75	934	3.36
3400	6070	0.721			692	2.38	740	2.59	789	2.81	840	3.08	937	3.66
3600	6430	0.810					757	2.97	809	3.19	854	3.44	949	4.03
3800	6790	0.900									872	3.86	957	4.46
4000	7140	1.000											972	4.90

No. 4 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.
1300	3030	0.106	413	.44										
1400	3270	0.122	410	.47	515	.74	608	1.06	690	1.41	770	1.78		
1500	3500	0.141	408	.50	510	.77	600	1.09	685	1.44	763	1.84		
1600	3730	0.160	410	.55	505	.80	595	1.13	678	1.50	755	1.89	893	2.72
1700	3970	0.180	413	.60	503	.85	588	1.17	670	1.53	748	1.94	883	2.80
1800	4220	0.202	415	.66	500	.90	583	1.22	663	1.58	738	1.99	875	2.87
1900	4430	0.225	420	.73	500	.96	580	1.27	658	1.63	733	2.03	868	2.93
2000	4670	0.250	428	.81	500	1.04	578	1.33	655	1.70	728	2.08	858	2.99
2100	4900	0.275	435	.89	503	1.12	578	1.40	650	1.76	720	2.16	850	3.07
2200	5130	0.302	443	.98	508	1.21	575	1.49	648	1.83	715	2.23	845	3.14
2300	5370	0.330	450	1.08	513	1.31	578	1.59	645	1.92	713	2.31	840	3.22
2400	5600	0.360	458	1.19	518	1.42	580	1.70	645	2.00	710	2.40	830	3.30
2500	5830	0.390	468	1.32	525	1.53	583	1.83	645	2.13	708	2.50	828	3.39
2600	6070	0.422	475	1.43	533	1.67	588	1.94	648	2.24	705	2.61	823	3.49
2800	6530	0.489	495	1.71	548	1.95	600	2.23	653	2.55	708	2.90	818	3.73
3000	7000	0.560	515	2.03	565	2.29	615	2.56	663	2.87	713	3.22	815	4.00
3200	7460	0.638	538	2.37	585	2.67	628	2.93	675	3.25	720	3.59	818	4.39
3400	7930	0.721			605	3.11	648	3.38	690	3.67	735	4.02	820	4.79
3600	8400	0.810					663	3.87	708	4.16	748	4.50	830	5.27
3800	8860	0.900									763	5.04	838	5.83
4000	9330	1.000											850	6.40

No. 4½ NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.	Rev.	H.P.
1300	3840	0.106	367	0.55										
1400	4130	0 122	365	0.59	458	0.93	540	1.34	613	1.79	685	2.25		
1500	4430	0.141	362	0.63	453	0.97	533	1.38	609	1.82	678	2.33		
1600	4720	0.160	365	0.69	449	1.02	529	1.43	602	1.89	671	2.39	793	3.44
1700	5020	0.180	367	0.76	447	1.07	522	1.48	596	1.93	665	2.45	785	3.54
1800	5310	0.202	369	0.84	445	1.14	518	1.54	589	2.00	656	2.51	778	3.63
1900	5610	0.225	373	0.92	445	1 22	516	1.60	585	2.07	651	2.57	771	3.71
2000	5900	0.250	380	1.02	445	1.31	513	1.69	582	2.15	647	2.63	762	3.79
2100	6200	0.275	387	1.13	447	1.42	513	1.78	578	2.23	640	2.74	756	3.89
2200	6500	0.302	393	1.24	451	1.53	511	1.89	576	2.31	636	2.82	751	3.97
2300	6790	0.330	400	1.37	456	1.65	513	2.01	573	2.43	633	2.92	747	4.07
2400	7090	0.360	407	1.51	460	1.80	516	2.15	573	2.53	631	3.04	738	4.17
2500	7380	0.390	416	1.67	467	1.94	518	2.31	573	2.69	629	3.16	736	4.29
2600	7680	0.422	422	1.81	473	2.11	522	2.45	576	2.84	627	3.30	731	4.42
2800	8270	0.489	440	2.17	487	2.47	533	2.82	580	3.22	629	3.67	727	4.72
3000	8860	0.560	458	2.57	502	2.90	547	3.24	589	3.63	633	4.07	725	5.06
3200	9450	0.638	478	3.00	520	3.38	558	3.71	600	4.11	640	4.54	727	5.55
3400	10040	0.721			538	3.93	576	4.27	613	4.64	653	5.08	729	6.06
3600	10630	0.810					589	4.90	629	5.27	665	5.69	738	6.66
3800	11220	0.900									678	6.38	745	7.37
4000	11810	1.000											756	8.10

No. 5 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	4740	0.106	330	.68										
1400	5100	0.122	328	.73	412	1.15	486	1.65	552	2.21	616	2.78		
1500	5470	0.141	326	.78	408	1.20	480	1.71	548	2.25	610	2.88		
1600	5830	0.160	328	.86	404	1.26	476	1.76	542	2.34	604	2.95	714	4.25
1700	6190	0.180	330	.94	402	1.33	470	1.82	536	2.39	598	3.03	706	4.38
1800	6560	0.202	332	1.03	400	1.40	466	1.90	530	2.47	590	3.10	700	4.48
1900	6930	0.225	336	1.14	400	1.50	464	1.98	526	2.55	586	3.18	694	4.58
2000	7290	0.250	342	1.26	400	1.62	462	2.08	524	2.65	582	3.25	686	4.68
2100	7660	0.275	348	1.39	402	1.75	462	2.19	520	2.75	576	3.38	680	4.80
2200	8010	0.302	354	1.53	406	1.89	460	2.33	518	2.85	572	3.48	676	4.90
2300	8380	0.330	360	1.69	410	2.04	462	2.48	516	3.00	570	3.60	672	5.03
2400	8750	0.360	366	1.86	414	2.22	464	2.65	516	3.13	568	3.75	664	5.15
2500	9100	0.390	374	2.06	420	2.40	466	2.85	516	3.33	566	3.90	662	5.30
2600	9480	0.422	380	2.24	426	2.60	470	3.03	518	3.50	564	4.08	658	5.45
2800	10200	0.489	396	2.68	438	3.05	480	3.48	522	3.98	566	4.53	654	5.83
3000	10940	0.560	412	3.18	452	3.58	492	4.00	530	4.48	570	5.03	652	6.25
3200	11660	0.638	430	3.70	468	4.18	502	4.57	540	5.08	576	5.60	654	6.85
3400	12390	0.721			484	4.85	518	5.27	552	5.73	588	6.28	656	7.48
3600	13120	0.810					530	6.05	566	6.50	598	7.03	664	8.22
3800	13850	0.900									610	7.88	670	9.10
4000	14580	1.000											680	10.00

No. 5½ NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	5730	0.106	300	.83										
1400	6170	0.122	298	.88	375	1.40	442	1.99	502	2.67	560	3.36		
1500	6620	0.141	296	.95	371	1.45	437	2.07	498	2.72	555	3.48		
1600	7060	0.160	298	1.04	367	1.52	433	2.13	493	2.83	549	3.57	649	5.14
1700	7500	0.180	300	1.13	366	1.60	427	2.20	487	2.89	544	3.66	642	5.29
1800	7940	0.202	302	1.25	364	1.70	424	2.30	482	2.99	537	3.75	636	5.42
1900	8380	0.225	306	1.38	364	1.82	422	2.39	478	3.09	533	3.84	631	5.54
2000	8820	0.250	311	1.53	364	1.96	420	2.52	476	3.21	529	3.93	624	5.66
2100	9260	0.275	316	1.68	366	2.12	420	2.65	473	3.33	524	4.08	618	5.81
2200	9700	0.302	322	1.85	369	2.28	418	2.82	471	3.45	520	4.21	615	5.93
2300	10140	0.330	327	2.05	373	2.47	420	3.00	469	3.63	518	4.36	611	6.08
2400	10590	0.360	333	2.25	377	2.68	422	3.21	469	3.78	517	4.54	604	6.23
2500	11030	0.390	340	2.49	382	2.90	424	3.45	469	4.02	515	4.72	602	6.41
2600	11470	0.422	346	2.71	387	3.15	427	3.66	471	4.24	513	4.93	598	6.59
2800	12350	0.489	360	3.24	398	3.69	437	4.21	475	4.81	515	5.48	595	7.05
3000	13230	0.560	375	3.84	411	4.33	447	4.84	482	5.42	518	6.08	593	7.56
3200	14110	0.638	391	4.48	426	5.05	456	5.54	491	6.14	524	6.78	595	8.29
3400	15000	0.721			440	5.87	471	6.38	502	6.93	535	7.59	596	9.04
3600	15880	0.810					482	7.32	515	7.87	544	8.50	604	9.95
3800	16760	0.900									555	9.53	609	11.00
4000	17640	1.000											618	12.10

No. 6 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	6820	0.106	275	.98										
1400	7350	0.122	274	1.05	344	1.66	405	2.37	460	3.18	513	4.00		
1500	7870	0.141	272	1.13	340	1.72	400	2.46	457	3.24	509	4.14		
1600	8400	0.160	274	1.23	337	1.81	397	2.54	452	3.36	504	4.25	595	6.12
1700	8920	0.180	275	1.35	335	1.91	392	2.62	447	3.44	499	4.36	589	6.30
1800	9450	0.202	277	1.49	334	2.02	389	2.73	442	3.56	492	4.47	584	6.45
1900	9970	0.225	280	1.64	334	2.16	387	2.85	439	3.67	489	4.57	579	6.59
2000	10500	0.250	285	1.82	334	2.33	385	3.00	437	3.82	485	4.68	572	6.73
2100	11030	0.275	290	2.00	335	2.52	385	3.16	434	3.96	480	4.86	567	6.91
2200	11550	0.302	295	2.20	339	2.72	384	3.35	432	4.11	477	5.00	564	7.06
2300	12070	0.330	300	2.43	342	2.94	385	3.57	430	4.32	475	5.18	560	7.24
2400	12600	0.360	305	2.68	345	3.19	387	3.82	430	4.50	474	5.40	554	7.42
2500	13120	0.390	312	2.96	350	3.45	389	4.10	430	4.79	472	5.62	552	7.63
2600	13650	0.422	317	3.22	355	3.74	392	4.36	432	5.04	470	5.87	549	7.85
2800	14700	0.489	330	3.85	365	4.39	400	5.00	435	5.73	472	6.52	545	8.39
3000	15750	0.560	344	4.57	377	5.15	410	5.76	442	6.45	475	7.24	544	9.00
3200	16790	0.638	359	5.33	390	6.01	419	6.59	450	7.31	480	8.06	545	9.86
3400	17850	0.721			403	6.98	432	7.60	460	8.24	490	9.04	547	10.80
3600	18900	0.810					442	8.71	472	9.36	499	10.10	554	11.90
3800	19950	0.900									509	11.30	559	13.10
4000	21000	1.000											567	14.40

No. 7 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	9290	0.106	236	1.34										
1400	10000	0.122	234	1.43	294	2.26	347	3.23	394	4.33	440	5.44		
1500	10720	0.141	233	1.53	292	2.34	343	3.35	392	4.41	436	5.64		
1600	11430	0.160	234	1.68	289	2.46	340	3.46	387	4.58	432	5.78	510	8.33
1700	12150	0.180	236	1.83	287	2.60	336	3.57	383	4.68	427	5.93	504	8.58
1800	12860	0.202	237	2.02	286	2.75	333	3.72	379	4.85	422	6.08	500	8.77
1900	13570	0.225	240	2.23	286	2.95	332	3.88	376	5.00	419	6.22	496	8.97
2000	14290	0.250	244	2.47	286	3.18	330	4.08	374	5.19	416	6.37	490	9.16
2100	15000	0.275	249	2.73	287	3.43	330	4.30	372	5.39	412	6.62	486	9.41
2200	15720	0.302	253	3.00	290	3.70	329	4.56	370	5.59	409	6.81	483	9.60
2300	16430	0.330	257	3.31	293	4.00	330	4.86	369	5.88	407	7.06	480	9.85
2400	17150	0.360	262	3.64	296	4.34	332	5.19	369	6.13	406	7.35	474	10.10
2500	17860	0.390	267	4.03	300	4.70	333	5.59	369	6.52	404	7.64	473	10.40
2600	18580	0.422	272	4.39	304	5.10	336	5.93	370	6.86	403	7.99	470	10.70
2800	20000	0.489	283	5.24	313	5.98	343	6.81	373	7.79	404	8.87	467	11.40
3000	21430	0.560	294	6.22	323	7.01	352	7.84	379	8.77	407	9.85	466	12.30
3200	22860	0.638	307	7.25	334	8.18	359	8.97	386	9.95	412	11.00	467	13.40
3400	24290	0.721			346	9.51	370	10.30	394	11.20	420	12.30	469	14.70
3600	25720	0.810					379	11.90	404	12.70	427	13.80	474	16.10
3800	27150	0.900									436	15.40	479	17.80
4000	28580	1.000											486	19.60

No. 8 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P	Rev.	H. P.
1300	12130	0.106	206	1.75										
1400	13060	0.122	205	1.87	258	2.95	304	4.22	345	5.65	385	7.10		
1500	14000	0.141	204	2.00	255	3.06	300	4.37	343	5.76	381	7.36		
1600	14930	0.160	205	2.19	253	3.21	298	4.51	339	5.98	378	7.55	446	10.9
1700	15860	0.180	206	2.39	251	3.39	294	4.66	335	6.11	374	7.74	441	11.2
1800	16800	0.202	208	2.64	250	3.59	291	4.86	331	6.33	369	7.94	438	11.5
1900	17730	0.225	210	2.91	250	3.85	290	5.06	329	6.53	366	8.13	434	11.7
2000	18660	0.250	214	3.23	250	4.15	289	5.33	328	6.78	364	8.32	429	12.0
2100	19600	0.275	218	3.56	251	4.48	289	5.61	325	7.04	360	8.64	425	12.3
2200	20530	0.302	221	3.92	254	4.83	288	5.96	324	7.30	358	8.90	423	12.6
2300	21460	0.330	225	4.33	256	5.22	289	6.35	323	7.68	356	9.22	420	12.9
2400	22400	0.360	229	4.76	259	5.67	290	6.78	323	8.00	355	9.60	415	13.2
2500	23330	0.390	234	5.26	263	6.13	291	7.30	323	8.51	354	9.98	414	13.6
2600	24260	0.422	238	5.73	266	6.66	294	7.74	324	8.96	353	10.40	411	14.0
2800	26130	0.489	248	6.85	274	7.81	300	8.90	326	10.20	354	11.60	409	14.9
3000	28000	0.560	258	8.13	283	9.15	308	10.20	331	11.50	356	12.90	408	16.0
3200	29860	0.638	269	9.47	293	10.70	314	11.70	338	13.00	360	14.30	409	17.5
3400	31720	0.721			303	12.40	324	13.50	345	14.70	368	16.10	410	19.1
3600	33590	0.810					331	15.50	354	16.60	374	18.00	415	21.1
3800	35460	0.900									381	20.20	419	23.3
4000	37330	1.000											425	25.6

No. 9 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	15360	0.106	183	2.21										
1400	16530	0.122	182	2.37	229	3.74	270	5.34	307	7.15	342	8.99		
1500	17720	0.141	181	2.54	227	3.87	267	5.53	304	7.29	339	9.31		
1600	18900	0.160	182	2.77	225	4.07	264	5.71	301	7.57	336	9.56	397	13.8
1700	20080	0.180	183	3.03	223	4.29	261	5.90	298	7.73	332	9.80	392	14.2
1800	21250	0.202	185	3.35	222	4.55	259	6.15	294	8.01	328	10.00	389	14.5
1900	22440	0.225	187	3.69	222	4.87	258	6.41	292	8.26	326	10.30	386	14.8
2000	23620	0.250	190	4.08	222	5.25	257	6.74	291	8.59	323	10.50	381	15.2
2100	24800	0.275	193	4.51	223	5.67	257	7.10	289	8.91	320	10.90	378	15.6
2200	25980	0.302	197	4.96	226	6.10	256	7.54	288	9.23	318	11.30	376	15.9
2300	27160	0.330	200	5.48	228	6.61	257	8.04	287	9.72	317	11.70	373	16.3
2400	28340	0.360	203	6.02	230	7.18	258	8.59	287	10.10	316	12.20	369	16.7
2500	29520	0.390	208	6.66	233	7.76	259	9.23	287	10.80	314	12.60	368	17.2
2600	30710	0.422	211	7.25	237	8.42	261	9.80	288	11.30	313	13.20	366	17.7
2800	33070	0.489	220	8.76	243	9.88	267	11.30	290	12.90	314	14.70	363	18.9
3000	35430	0.560	229	10.30	251	11.60	273	13.00	294	14.50	317	16.30	362	20.3
3200	37790	0.638	239	12.00	260	13.50	279	14.80	300	16.40	320	18.10	363	22.2
3400	40150	0.721			269	15.70	288	17.10	307	18.60	327	20.30	364	24.2
3600	42510	0.810					294	19.60	314	21.10	332	22.80	369	26.7
3800	44880	0.900									339	25.50	372	29.5
4000	47240	1.000											378	32.4

No. 10 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	18960	0.106	165	2.73										
1400	20410	0.122	164	2.92	206	4.61	243	6.59	276	8.83	308	11.1		
1500	21870	0.141	163	3.13	204	4.78	240	6.83	274	9.00	305	11.5		
1600	23330	0.160	164	3.42	202	5.02	238	7.05	271	9.34	302	11.8	357	17.0
1700	24790	0.180	165	3.74	201	5.30	235	7.28	268	9.54	299	12.1	353	17.5
1800	26240	0.202	166	4.13	200	5.61	233	7.59	265	9.89	295	12.4	350	17.9
1900	27700	0.225	168	4.55	200	6.01	232	7.91	263	10.20	293	12.7	347	18.3
2000	29160	0.250	171	5.04	200	6.48	231	8.32	262	10.60	291	13.0	343	18.7
2100	30620	0.275	174	5.56	201	7.00	231	8.77	260	11.00	288	13.5	340	19.2
2200	32080	0.302	177	6.12	203	7.54	230	9.31	259	11.40	286	13.9	338	19.6
2300	33540	0.330	180	6.76	205	8.16	231	9.92	258	12.00	285	14.4	336	20.1
2400	34990	0.360	183	7.43	207	8.86	232	10.60	258	12.50	284	15.0	332	20.6
2500	36450	0.390	187	8.22	210	9.58	233	11.40	258	13.30	283	15.6	331	21.2
2600	37910	0.422	190	8.95	213	10.40	235	12.10	259	14.00	282	16.3	329	21.8
2800	40830	0.489	198	10.70	219	12.20	240	13.90	261	15.90	283	18.1	327	23.3
3000	43740	0.560	206	12.70	226	14.30	246	16.00	265	17.90	285	20.1	326	25.0
3200	46660	0.638	215	14.80	234	16.70	251	18.30	270	20.30	288	22.4	327	27.4
3400	49570	0.721			242	19.40	259	21.10	276	22.90	294	25.1	328	29.9
3600	52490	0.810					265	24.20	283	26.00	299	28.1	332	32.9
3800	55400	0.900									305	31.5	335	36.4
4000	58320	1.000											340	40.0

No. 11 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	22930	0.106	150	3.30										
1400	24700	0.122	149	3.53	187	5.58	221	7.97	251	10.7	280	13.4		
1500	26460	0.141	148	3.79	186	5.78	218	8.26	249	10.9	277	13.9		
1600	28230	0.160	149	4.14	184	6.08	216	8.53	246	11.3	275	14.3	325	20.6
1700	29990	0.180	150	4.53	183	6.41	214	8.81	244	11.6	272	14.7	321	21.2
1800	31750	0.202	151	5.00	182	6.79	212	9.18	241	12.0	268	15.0	318	21.7
1900	33520	0.225	153	5.51	182	7.27	211	9.57	239	12.4	266	15.4	316	22.2
2000	35280	0.250	156	6.10	182	7.84	210	10.10	238	12.8	265	15.7	312	22.6
2100	37050	0.275	158	6.73	183	8.87	210	10.60	236	13.3	262	16.3	309	23.2
2200	38810	0.302	161	7.41	185	9.12	209	11.30	236	13.8	260	16.8	307	23.7
2300	40580	0.330	164	8.18	186	9.87	210	12.00	235	14.5	259	17.4	306	24.3
2400	42340	0.360	166	8.99	188	10.70	211	12.80	235	15.1	258	18.2	302	24.9
2500	44100	0.390	170	9.95	191	11.60	212	13.80	235	16.1	257	18.9	301	25.7
2600	45870	0.422	173	10.80	194	12.60	214	14.60	236	17.0	256	19.7	299	26.4
2800	49400	0.489	180	13.00	199	14.80	218	16.80	237	19.2	257	21.9	297	28.2
3000	52910	0.560	187	15.40	206	17.30	224	19.40	241	21.7	259	24.3	296	30.3
3200	56450	0.638	196	17.90	213	20.20	228	22.10	246	24.6	262	27.1	297	33.2
3400	59980	0.721			220	23.50	236	25.50	251	27.7	267	30.4	298	36.2
3600	63510	0.810					241	29.30	257	31.5	272	34.0	302	39.8
3800	67030	0.900									277	38.1	305	44.1
4000	70560	1.000											309	48.4

No. 12 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	27290	0.106	138	3.93										
1400	29390	0.122	137	4.21	172	6.64	203	9.49	230	12.7	257	16.0		
1500	31490	0.141	136	4.51	170	6.88	200	9.84	228	13.0	254	16.6		
1600	33600	0.160	137	4.93	168	7.23	198	10.20	226	13.5	252	17.0	298	24.5
1700	35690	0.180	138	5.39	168	7.63	196	10.50	223	13.7	249	17.4	294	25.2
1800	37790	0.202	138	5.95	167	8.08	194	10.90	221	14.3	246	17.9	292	25.8
1900	39890	0.225	140	6.55	167	8.66	193	11.40	219	14.7	244	18.3	289	26.4
2000	41990	0.250	143	7.26	167	9.33	193	12.00	218	15.3	243	18.7	286	26.9
2100	44090	0.275	145	8.01	168	10.10	193	12.60	217	15.8	240	19.5	283	27.7
2200	46190	0.302	148	8.81	169	10.90	192	13.40	216	16.4	238	20.0	282	28.2
2300	48290	0.330	150	9.74	171	11.80	193	14.30	215	17.3	238	20.7	280	29.0
2400	50390	0.360	153	10.70	173	12.80	193	15.30	215	18.0	237	21.6	277	29.7
2500	52490	0.390	156	11.80	175	13.80	194	16.40	215	19.2	236	22.5	276	30.5
2600	54590	0.422	158	12.90	178	15.00	196	17.40	216	20.2	235	23.5	274	31.4
2800	58790	0.489	165	15.40	183	17.60	200	20.00	218	22.9	236	26.1	273	33.6
3000	62980	0.560	172	18.30	188	20.60	205	23.00	221	25.8	238	29.0	272	36.0
3200	67180	0.638	179	21.30	195	24.10	209	26.40	225	29.2	240	32.3	273	39.5
3400	71380	0.721			202	27.90	216	30.40	230	33.0	245	36.2	273	43.1
3600	75580	0.810					221	34.90	236	37.5	249	40.5	277	47.4
3800	79780	0.900									254	45.4	279	52.4
4000	83980	1.000											283	57.6

No. 13 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	32040	0.106	127	4.61										
1400	34500	0.122	126	4.94	159	7.79	187	11.1	212	14.9	237	18.8		
1500	36960	0.141	125	5.29	157	8.08	185	11.6	211	15.2	235	19.4		
1600	39430	0.160	126	5.78	156	8.48	183	11.9	209	15.8	232	20.0	275	28.7
1700	41900	0.180	127	6.32	155	8.96	181	12.3	206	16.1	230	20.5	272	29.6
1800	44350	0.202	128	6.98	154	9.48	179	12.8	204	16.7	227	21.0	269	30.3
1900	46810	0.225	129	7.69	154	10.20	179	13.4	202	17.2	225	21.5	267	30.9
2000	49280	0.250	132	8.52	154	11.00	178	14.1	202	17.9	224	22.0	264	31.6
2100	51740	0.275	134	9.40	155	11.80	178	14.8	200	18.6	222	22.8	262	32.5
2200	54210	0.302	136	10.4	156	12.80	177	15.7	199	19.3	220	23.5	260	33.1
2300	56680	0.330	139	11.4	158	13.80	178	16.8	199	20.3	219	24.3	259	34.0
2400	59130	0.360	141	12.6	159	15.00	179	17.9	199	21.1	219	25.4	255	34.8
2500	61600	0.390	144	13.9	162	16.20	179	19.3	199	22.5	218	26.4	255	35.8
2600	64060	0.422	146	15.1	164	17.60	181	20.5	199	23.7	217	27.6	253	36.8
2800	69000	0.489	152	18.1	169	20.60	185	23.5	201	26.9	218	30.6	252	39.4
3000	73920	0.560	159	21.5	174	24.20	189	27.0	204	30.3	219	34.0	251	42.3
3200	78850	0.638	166	25.0	180	28.20	193	30.9	208	34.3	222	37.9	252	46.3
3400	83770	0.721			186	32.80	199	35.7	212	38.7	226	42.4	252	50.5
3600	88700	0.810					204	40.9	218	44.0	230	47.5	255	55.6
3800	93620	0.900									235	53.2	258	61.5
4000	98560	1.000											262	67.6

No. 14 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	37150	0.106	118	5.35										
1400	40000	0.122	117	5.72	147	9.04	174	12.9	197	17.3	220	21.8		
1500	42860	0.141	117	6.14	146	9.37	172	13.4	196	17.7	218	22.6		
1600	45720	0.160	117	6.70	144	9.84	170	13.8	194	18.3	216	23.1	255	33.3
1700	48580	0.180	118	7.33	144	10.40	168	14.3	192	18.7	214	23.7	252	34.3
1800	51420	0.202	119	8.10	143	11.00	167	14.9	189	19.4	211	24.3	250	35.1
1900	54290	0.225	120	8.92	143	11.80	166	15.5	188	20.0	209	24.9	248	35.9
2000	57150	0.250	122	9.88	143	12.70	165	16.3	187	20.8	208	25.5	245	36.7
2100	60010	0.275	124	10.90	144	13.70	165	17.2	186	21.6	206	26.5	243	37.6
2200	62880	0.302	127	12.00	145	14.80	164	18.3	185	22.4	204	27.3	242	38.4
2300	65720	0.330	129	13.30	147	16.00	165	19.5	184	23.5	204	28.2	240	39.4
2400	68580	0.360	131	14.60	148	17.40	166	20.8	184	24.5	203	29.4	237	40.4
2500	71430	0.390	134	16.10	150	18.80	167	22.4	184	26.1	202	30.6	237	41.6
2600	74290	0.422	136	17.60	152	20.40	168	23.7	185	27.5	202	32.0	235	42.7
2800	80010	0.489	142	21.00	157	23.90	172	27.3	187	31.2	202	35.5	234	45.7
3000	85730	0.560	147	24.90	162	28.00	176	31.4	189	35.1	204	39.4	233	49.0
3200	91440	0.638	154	29.00	167	32.70	179	35.9	193	39.8	206	43.9	234	53.7
3400	97150	0.721			173	38.00	185	41.4	197	44.9	210	49.2	234	58.6
3600	102870	0.810					189	47.4	202	51.0	214	55.1	237	64.5
3800	108580	0.900									218	61.8	239	71.4
4000	114290	1.000											243	78.4

No. 15 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	42650	0.106	110	6.14										
1400	45920	0.122	109	6.57	137	10.4	162	14.8	184	19.9	205	25.0		
1500	49210	0.141	109	7.04	136	10.8	160	15.4	183	20.3	203	25.9		
1600	52490	0.160	109	7.70	135	11.3	159	15.9	181	21.0	201	26.6	238	38.3
1700	55760	0.180	110	8.42	134	11.9	157	16.4	179	21.5	199	27.2	235	39.4
1800	59040	0.202	111	9.29	133	12.6	155	17.1	177	22.3	197	27.9	233	40.3
1900	62320	0.225	112	10.20	133	13.5	155	17.8	175	23.0	195	28.6	231	41.2
2000	65610	0.250	114	11.40	133	14.6	154	18.7	175	23.9	194	29.3	229	42.1
2100	68900	0.275	116	12.50	134	15.8	154	19.7	173	24.8	192	30.4	227	43.2
2200	72160	0.302	118	13.80	135	17.0	153	21.0	173	25.7	191	31.3	225	44.1
2300	75450	0.330	120	15.20	137	18.4	154	22.3	172	27.0	190	32.4	224	45.2
2400	78720	0.360	122	16.70	138	19.9	155	23.8	172	28.1	189	33.8	221	46.4
2500	82010	0.390	125	18.50	140	21.6	155	25.7	172	29.9	189	35.1	221	47.7
2600	85300	0.422	127	20.10	142	23.4	157	27.2	173	31.5	188	36.7	219	49.1
2800	91850	0.489	132	24.10	146	27.5	160	31.3	174	35.8	189	40.7	218	52.4
3000	98420	0.560	137	28.60	151	32.2	164	36.0	177	40.3	190	45.2	217	56.3
3200	104970	0.638	143	33.30	156	37.6	167	41.2	180	45.7	192	50.4	218	61.7
3400	111520	0.721			161	43.7	173	47.5	184	51.5	196	56.5	219	67.3
3600	118100	0.810					177	54.5	189	58.5	199	63.2	221	74.0
3800	124650	0.900									203	70.9	223	81.9
4000	131210	1.000											227	90.0

No. 16 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	48520	0.106	103	6.99										
1400	52250	0.122	103	7.48	129	11.8	152	16.9	173	22.6	193	28.4		
1500	55980	0.141	102	8.01	128	12.2	150	17.5	171	23.0	191	29.4		
1600	59720	0.160	103	8.76	126	12.9	149	18.1	169	23.9	189	30.2	223	43.5
1700	63450	0.180	103	9.58	126	13.6	147	18.6	168	24.4	187	31.0	221	44.8
1800	67170	0.202	104	10.60	125	14.4	146	19.4	166	25.3	184	31.8	219	45.8
1900	70910	0.225	105	11.70	125	15.4	145	20.3	164	26.1	183	32.5	217	46.9
2000	74640	0.250	107	12.90	125	16.6	144	21.3	164	27.1	182	33.3	214	47.9
2100	78380	0.275	109	14.20	126	17.9	144	22.5	163	28.2	180	34.6	213	49.2
2200	82110	0.302	111	15.70	127	19.3	144	23.8	162	29.2	179	35.6	211	50.2
2300	85840	0.330	113	17.30	128	20.9	144	25.4	161	30.7	178	36.9	210	51.5
2400	89570	0.360	114	19.00	129	22.7	145	27.1	161	32.0	178	38.4	208	52.7
2500	93300	0.390	117	21.10	131	24.5	146	29.2	161	34.1	177	39.9	207	54.3
2600	97040	0.422	119	22.90	133	26.6	147	31.0	162	35.9	176	41.7	206	55.8
2800	104500	0.489	124	27.40	137	31.2	150	35.6	163	40.7	177	46.3	204	59.7
3000	111970	0.560	128	32.50	141	36.6	154	41.0	166	45.8	178	51.5	204	64.0
3200	119430	0.638	134	37.90	146	42.8	157	46.9	169	52.0	180	57.4	204	70.2
3400	126900	0.721			151	49.7	162	54.0	173	58.6	184	64.3	205	76.6
3600	134380	0.810					166	62.0	177	66.6	187	71.9	208	84.2
3800	141810	0.900									191	80.7	209	93.2
4000	149300	1.000											213	102.4

No. 17 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	54780	0.106	97	7.89										
1400	58980	0.122	97	8.44	121	13.3	143	19.1	162	25.5	181	32.1		
1500	63200	0.141	96	9.05	120	13.8	141	19.7	161	26.0	180	33.2		
1600	67430	0.160	97	9.88	119	14.5	140	20.4	160	27 0	178	34.1	210	49.1
1700	71630	0.180	97	10.80	118	15.3	138	21.0	158	27.6	176	35.0	208	50.6
1800	75840	0.202	98	11.90	118	16.2	137	21.9	156	28.6	174	35.8	206	51.7
1900	80050	0.225	99	13.20	118	17.4	137	22.9	155	29.5	172	36.7	204	52.9
2000	84270	0.250	101	14.60	118	18.7	136	24.1	154	30.6	171	37.6	202	54.1
2100	88490	0.275	102	16.10	118	20.2	136	25.4	153	31.8	170	39.0	200	55.5
2200	92690	0.302	104	17.70	120	21.8	135	26.9	152	33.0	168	40.2	199	56.7
2300	96900	0.330	106	19.50	121	23.6	136	28.7	152	34.7	168	41.6	198	58.1
2400	101130	0.360	108	21.50	122	25.6	137	30.6	152	36.1	167	43.4	195	59.5
2500	105340	0.390	110	23.80	124	27.7	137	33.0	152	38.4	167	45.1	195	61.3
2600	109560	0.422	112	25.90	125	30.1	138	35.0	152	40.5	166	47.1	194	63.0
2800	117990	0.489	117	30.90	129	35.3	141	40.2	154	46.0	167	52.3	192	67.3
3000	126410	0.560	121	36.70	133	41.3	145	46.2	156	51.7	168	58.1	192	72.3
3200	134820	0.638	127	42.80	138	48.3	148	52.9	159	58.7	170	64.7	192	79.2
3400	143260	0.721			142	56.1	152	61.0	162	66.2	173	72.5	193	86.4
3600	151700	0.810					156	69.9	167	75.1	176	81.2	195	95.1
3800	160100	0.900									180	91.0	197	105.2
4000	168550	1.000											200	115.6

No. 18 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

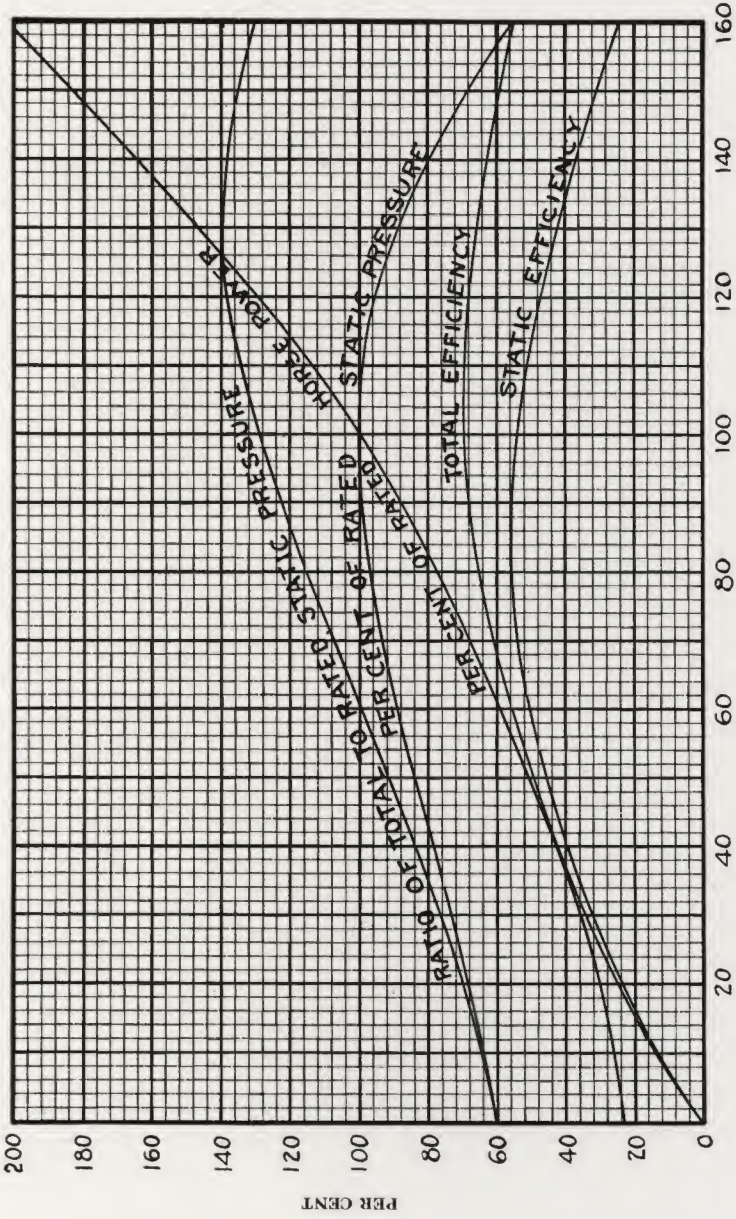
Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	61420	0.106	92	8.85										
1400	66130	0.122	91	9.46	115	14.9	135	21.4	153	28.6	171	36.0		
1500	70860	0.141	91	10.20	113	15.5	133	22.1	152	29.2	170	37.3		
1600	75590	0.160	91	11.10	112	16.3	132	22.9	151	30.3	168	38.2	198	55.1
1700	80300	0.180	92	12.10	112	17.2	131	23.6	149	30.9	166	39.2	196	56.7
1800	85010	0.202	92	13.40	111	18.2	130	24.6	147	32.1	164	40.2	195	58.0
1900	89750	0.225	93	14.80	111	19.5	129	25.6	146	33.1	163	41.2	193	59.3
2000	94480	0.250	95	16.30	111	21.0	128	27.0	146	34.4	162	42.1	191	60.6
2100	99200	0.275	97	18.00	112	22.7	128	28.4	145	35.7	160	43.8	189	62.2
2200	103910	0.302	98	19.80	113	24.4	128	30.2	144	36.9	159	45.0	188	63.5
2300	108650	0.330	100	21.90	114	26.4	128	32.2	143	38.9	158	46.7	187	65.1
2400	113370	0.360	102	24.10	115	28.7	129	34.4	143	40.5	158	48.6	185	66.8
2500	118100	0.390	104	26.60	117	31.2	130	36.9	143	43.1	157	50.6	184	68.7
2600	122820	0.422	106	29.00	118	33.7	131	39.7	144	45.4	157	52.8	183	70.6
2800	132260	0.489	110	34.70	122	39.5	133	45.0	145	51.5	157	58.7	182	75.5
3000	141710	0.560	115	41.20	126	46.3	137	51.8	147	58.0	158	65.1	181	81.0
3200	151160	0.638	120	48.00	130	54.1	140	59.3	150	65.8	160	72.6	182	88.8
3400	160600	0.721			135	62.9	144	68.4	153	74.2	163	81.3	182	96.9
3600	170070	0.810					147	78.4	157	84.2	166	91.0	185	106.6
3800	179500	0.900									170	102.1	186	117.9
4000	188950	1.000											189	129.6

No. 19 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	68430	0.106	87	9.86										
1400	73680	0.122	86	10.60	109	16.7	128	23.8	145	31.9	162	40.1		
1500	78950	0.141	86	11.30	107	17.3	126	24.7	144	32.5	161	41.5		
1600	84220	0.160	86	12.40	106	18.1	125	25.5	143	33.7	159	42.6	188	61.4
1700	89470	0.180	87	13.50	106	19.1	124	26.3	141	34.4	157	43.7	186	63.2
1800	94720	0.202	87	14.90	105	20.3	123	27.4	140	35.7	155	44.8	184	64.6
1900	99990	0.225	89	16.40	105	21.7	122	28.6	139	36.8	154	45.9	183	66.1
2000	105270	0.250	90	18.20	105	23.4	122	30.0	138	38.3	153	46.9	181	67.5
2100	110520	0.275	92	20.10	106	25.3	122	31.7	137	39.7	152	48.7	179	69.3
2200	115780	0.302	93	22.10	107	27.2	121	33.6	136	41.2	151	50.2	178	70.8
2300	121050	0.330	95	24.40	108	29.5	122	35.8	136	43.3	150	52.0	177	72.6
2400	126310	0.360	96	26.80	109	32.0	122	38.3	136	45.1	150	54.2	175	74.4
2500	131580	0.390	99	29.70	111	34.6	123	41.2	136	48.0	149	56.3	174	76.5
2600	136840	0.422	100	32.30	112	37.6	124	43.7	136	50.5	149	58.8	173	78.7
2800	147390	0.489	104	38.60	115	44.1	126	50.2	137	57.4	149	65.3	172	84.1
3000	157890	0.560	109	45.90	119	51.6	130	57.8	140	64.6	150	72.6	172	90.3
3200	168420	0.638	113	53.40	123	60.3	132	66.1	142	73.3	152	80.9	172	98.9
3400	178950	0.721			127	70.0	136	76.2	145	82.7	155	90.6	173	107.9
3600	189490	0.810					140	87.4	149	93.9	157	101.4	175	118.8
3800	199990	0.900									161	113.7	176	131.4
4000	210530	1.000											179	144.4

No. 20 NIAGARA CONOIDAL (TYPE N) FAN CAPACITIES AND STATIC PRESSURES AT 70° F. AND 29.92 INCHES BAROMETER

Outlet Velocity Ft. per Min.	Cu. Ft. Air per Min.	Add for Total Press.	½" S. P.		¾" S. P.		1" S. P.		1¼" S. P.		1½" S. P.		2" S. P.	
			Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.	Rev.	H. P.
1300	75820	0.106	83	10.9										
1400	81640	0.122	82	11.7	103	18.5	122	26.4	138	35.3	154	44.4		
1500	87480	0.141	82	12.5	102	19.1	120	27.3	137	36.0	153	46.0		
1600	93320	0.160	82	13.7	101	20.1	119	28.2	136	37.4	151	47.2	179	68.0
1700	99140	0.180	83	15.0	101	21.2	118	29.1	134	38.2	150	48.4	177	70.0
1800	104960	0.202	83	16.5	100	22.5	117	30.4	133	39.5	148	49.6	175	71.6
1900	110800	0.225	84	18.2	100	24.1	116	31.6	132	40.8	147	50.8	174	73.2
2000	116640	0.250	86	20.2	100	25.9	116	33.3	131	42.4	146	52.0	172	74.8
2100	122480	0.275	87	22.3	101	28.0	116	35.1	130	44.0	144	54.0	170	76.8
2200	128300	0.302	89	24.5	102	30.2	115	37.3	130	45.6	143	55.6	169	78.4
2300	134140	0.330	90	27.1	103	32.7	116	39.7	129	48.0	143	57.6	168	80.4
2400	139960	0.360	92	29.7	104	35.5	116	42.4	129	50.0	142	60.0	166	82.4
2500	145800	0.390	94	32.9	105	38.3	117	45.6	129	53.2	142	62.4	166	84.8
2600	151650	0.422	95	35.8	107	41.6	118	48.4	130	56.0	141	65.2	165	87.2
2800	163300	0.489	99	42.8	110	48.8	120	55.6	131	63.6	142	72.4	164	93.2
3000	174960	0.560	103	50.8	113	57.2	123	64.0	133	71.6	143	80.4	163	100.0
3200	186620	0.638	108	59.2	117	66.8	126	73.2	135	81.2	144	89.6	164	109.6
3400	198300	0.721			121	77.6	130	84.4	138	91.6	147	100.4	164	119.6
3600	209960	0.810					133	96.8	142	104.0	150	112.4	166	131.6
3800	221600	0.900									153	126.0	167	145.6
4000	233300	1.000											170	160.0



PERFORMANCE CURVE OF BUFFALO NIAGARA CONOIDAL FANS

CORRESPONDING PRESSURES AND VELOCITIES OF DRY AIR AT 70° F. AND 29.92 INCHES BAROMETER

Inches of Water	Ounces per Sq. In.	Velocity Ft. per Min.	Inches of Water	Ounces per Sq. In.	Velocity Ft. per Min.
.05	.0289	896	4.77	2.750	8745
.10	.0577	1266	5.00	2.884	8943
.20	.1154	1791	5.20	3.000	9134
.25	.1443	2003	5.50	3.172	9392
.30	.1730	2193	6.00	3.460	9810
.40	.2308	2533	6.07	3.500	9864
.43	.2500	2637	6.50	3.749	10210
.50	.2884	2832	6.94	4.000	10545
.60	.3460	3102	7.00	4.037	10595
.70	.4037	3351	7.50	4.326	10968
.75	.4326	3468	7.80	4.500	11187
.80	.4614	3582	8.00	4.614	11328
.87	.5000	3729	8.67	5.000	11792
.90	.5190	3800	9.00	5.190	12015
1.00	.5768	4005	9.54	5.500	12367
1.25	.7209	4478	10.00	5.768	12665
1.30	.7500	4566	10.40	6.000	12915
1.50	.8650	4905	11.00	6.344	13282
1.73	1.0000	5273	11.27	6.500	13445
1.75	1.0092	5298	12.00	6.921	13875
2.00	1.1535	5664	12.14	7.000	13950
2.17	1.2500	5895	13.00	7.497	14440
2.25	1.2975	6007	13.87	8.000	14913
2.50	1.4418	6332	14.00	8.074	14985
2.60	1.5000	6457	15.00	8.650	15510
2.75	1.5860	6641	15.61	9.000	15820
3.00	1.7300	6937	16.00	9.227	16020
3.03	1.7500	6976	17.00	9.805	16513
3.25	1.8740	7220	17.34	10.000	16675
3.47	2.0000	7457	18.00	10.380	16990
3.50	2.0185	7492	19.00	10.960	17456
3.75	2.1630	7756	19.07	11.000	17488
3.90	2.2500	7910	20.00	11.535	17910
4.00	2.3070	8010	20.81	12.000	18265
4.25	2.4510	8256	22.54	13.000	19012
4.34	2.5000	8337	24.28	14.000	19730
4.50	2.5950	8496	26.01	15.000	20420
4.75	2.7395	8729	27.74	16.000	21090

BUFFALO ENGINES FOR FAN SERVICE

A brief identification of types and the service for which each is adapted will prevent improper selection of engines for driving fans. The following schedule shows a sufficient variety of designs to cover any requirements.

HORIZONTAL CENTER CRANK HIGH PRESSURE ENGINES are of the very highest grade and finish. Class "A" engines run in oil with splash lubrication and enclosed dust-proof oil-tight crank case. Class "B" are open engines. Both have forged crank-shaft, removable main bearing liners, forged connecting rod and all bearings adjustable. Furnished either with or without cast iron subbase. Suitable for the best grade of heating and ventilating work.

CLASS "A" AND "B" LOW PRESSURE ENGINES:

Our horizontal center crank engines are built with cylinders proportioned for steam pressures of 15 to 30 pounds usually carried in low pressure heating plants. Otherwise identical with engines built for high steam pressures.

HORIZONTAL SIDE CRANK ENGINES:

To suit the preference of some engineers, we build a complete line of engines for high and low steam pressures of the side crank type, with features of design which are otherwise identical with the horizontal center crank engines. Class "A" engines are enclosed with splash lubrication. Class "B" are open frame.

CLASS "N" HORIZONTAL SIDE CRANK ENGINES are specially designed for driving fans in commercial applications, as for factory heating and ventilating plants, drying outfits, etc. at ordinary speeds. The design is strong, substantial and the engine simple and accessible, with balanced piston valve, removable babbitt liners in main bearings, bored crosshead guides and adjustable brasses. A well built and economical engine with greater attention paid to design than to high finish.

VERTICAL ENGINES:

Built from 4″ to 12″ stroke, of the same design and with many parts interchangeable with horizontal Class "A" and Class "B" engines. Class "A" are enclosed self-oiling and dust-proof engines. Class "B" are open frame.

Large bore cylinders for low steam pressures make these engines particularly adapted for driving the smaller sizes of fans in schools and public buildings. Appearance and finish suitable for any engine room.

CLASS "O" VERTICAL ENGINES are open frame, extremely accessible for adjustment and with extra large bearings throughout. This is a heavier engine than Class "A" and "B" verticals and more accessible for adjustment but without much bright work. Recommended for factory heating, ventilating and drying, or mechanical draft installations, driving centrifugal pumps, etc.

CLASS "I" VERTICAL:

A special type, perfected some years ago and still popular for driving full housing fans in the smaller sizes. It occupies very limited space and cannot be improved on for all around service.

DOUBLE CYLINDER VERTICAL ENGINES:

For direct connection to high speed fans for forced draft or similar installations. Built in two types, single acting D. V. S. A. and double acting D. V. D. A. Single acting engines in sizes suitable for No. 4 to No. 7 Type "N" fans and double acting for No. 6 to No. 13 Type "N." These engines were designed for forced draft on ship-board and wherever limited space requires the use of a high speed reliable fan engine.

The size of engines recommended under ordinary conditions for various fans will be found in tables on pages 46 and 47.

NIAGARA CONOIDAL (TYPE N) FANS WITH PROPER COMBINATIONS OF HEATERS AND ENGINES FOR PUBLIC BUILDINGS AND INDUSTRIAL INSTALLATIONS

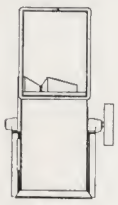
Fan No.	Cubic Feet of Air per Min.		Buffalo Standard Heater				Engine Size	
	1 Inch Total Press.	2 Inch. Total Press.	Arrangement	Style	Size	Clear Area Sq. Ft.	Low Press. Steam	High Press. Steam
4	4340	6130	Single	R.O.A.	3′-0″ x 3′- 4″	4.4		
					3′-0″ x 3′-10″	5.2		
4½	5490	7760	Single	R.O.A.	3′-0″ x 3′-10″	5.2		4 x4 A
					3′-0″ x 4′- 4″	6.0		3 x3½I
					3′-0″ x 4′-10″	6.8		
5	6770	9580	Single	R.O.A.	3′-0″ x 4′- 4″	6.0		
					3′-0″ x 4′-10″	6.8	5x5	4 x4 A
					3′-0″ x 5′- 4″	7.6		4 x3½I
					3′-0″ x 5′-10″	8.4		
5½	8200	11590	Single	R.O.A.	3′-0″ x 5′- 4″	7.6		
					3′-0″ x 5′-10″	8.4		4 x4 A
					4′-0″ x 5′- 4″	9.7	6x6	4 x3½I
					4′-0″ x 5′-10″	10.7		
					4′-0″ x 6′- 4″	11.2		
6	9750	13790	Single	R.O.A.	4′-0″ x 5′- 4″	9.7		
					4′-0″ x 5′-10″	10.7		
					4′-0″ x 6′- 4″	11.2	6x6	5 x5 A
					4′-0″ x 6′-10″	12.6		4½x5 A
					4′-6″ x 5′-10″	12.1		
					4′-6″ x 6′- 4″	13.1		
7	13280	18770	Single	R.O.A.	4′-0″ x 6′-10″	12.6		
					4′-6″ x 5′-10″	12.1		
					4′-6″ x 6′- 4″	13.1		
					4′-6″ x 6′-10″	14.2		
					4′-6″ x 7′- 4″	15.3	8x6	5 x5 A
					5′-0″ x 6′- 4″	14.1		5½x7 I
					5′-0″ x 6′-10″	15.4		
					5′-0″ x 7′- 4″	16.6		
					5′-0″ x 7′-10″	17.7		
8	17340	24520	Single	R.O.A.	5′-0″ x 7′- 4″	16.6		
					5′-0″ x 7′-10″	17.7		
					6′-0″ x 7′- 4″	19.8	10x8	6 x6 A
					6′-0″ x 7′-10″	21.3		5½x7 I
					6′-0″ x 8′- 4″	22.7		
9	21950	31020	Single	R.O.A.	6′-0″ x 7′- 4″	19.8		
					6′-0″ x 7′-10″	21.3		
					6′-0″ x 8′- 4″	22.7		
					6′-0″ x 8′-10″	24.2	10x8	6 x6 A
				R.B.	7′-0″ x 7′- 4″	23.6		6½x8 I
					7′-0″ x 7′-10″	25.4		
					7′-0″ x 8′- 4″	27.2		
10	27090	38310	Single	R.B.	7′-0″ x 7′-10″	25.4		
					7′-0″ x 8′- 4″	27.2		
					7′-0″ x 8′-10″	29.0		7 x7 A
					7′-0″ x 9′- 4″	30.7	12x8	6½x8 I
					7′-0″ x 9′-10″	32.5		6 x10 N
					8′-6″ x 8′- 4″	33.2		
					8′-6″ x 8′-10″	35.3		

NIAGARA CONOIDAL (TYPE N) FANS WITH PROPER COMBINATIONS OF HEATERS AND ENGINES FOR PUBLIC BUILDINGS AND INDUSTRIAL INSTALLATIONS

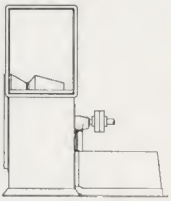
Fan No.	Cubic Feet of Air per Min.		Buffalo Standard Heater				Engine Size	
	1 Inch Total Press.	2 Inch. Total Press.	Arrangement	Style	Size	Clear Area Sq. Ft.	Low Press. Steam	High Press. Steam
11	32780	46360	Single	R.B.	7′-0″ x 9′- 4″	30.7	12x8	8 x 8 A 7½x 9 I 7 x12 N
					7′-0″ x 9′-10″	32.5		
					8′-6″ x 8′- 4″	33.2		
					8′-6″ x 8′-10″	35.3		
					8′-6″ x 9′- 4″	37.6		
					8′-6″ x 9′-10″	39.8		
					8′-6″ x 10′- 4″	41.8		
					8′-6″ x 10′-10″	44.0		
					9′-6″ x 8′- 4″	36.7		
					9′-6″ x 8′-10″	39.0		
					9′-6″ x 9′- 4″	41.4		
					9′-6″ x 9′-10″	43.8		
12	39010	55170	Single	R.B.	8′-6″ x 8′-10″	35.3	15x8	10 x 8 A 8 x10 A 7 x12 N
					8′-6″ x 9′- 4″	37.6		
					8′-6″ x 9′-10″	39.8		
					8′-6″ x 10′- 4″	41.8		
					8′-6″ x 10′-10″	44.0		
					9′-6″ x 8′- 4″	36.7		
					9′-6″ x 8′-10″	39.0		
					9′-6″ x 9′- 4″	41.4		
					9′-6″ x 9′-10″	43.8		
					9′-6″ x 10′- 4″	46.0		
					9′-6″ x 10′-10″	48.4		
					9′-6″ x 11′- 4″	50.8		
13	45780	64730	Single	R.B.	8′-6″ x 10′- 4″	41.8	15x8	10 x 8 A 8 x12 N
					8′-6″ x 10′-10″	44.0		
					9′-6″ x 9′- 4″	41.4		
					9′-6″ x 9′-10″	43.8		
					9′-6″ x 10′- 4″	46.0		
					9′-6″ x 10′-10″	48.4		
					9′-6″ x 11′- 4″	50.8		
					9′-6″ x 11′-10″	53.2		
			Back to Back	R.O.A.	6′-0″ x 7′-10″	42.6		
					6′-0″ x 8′- 4″	45.4		
					6′-0″ x 8′-10″	48.4		
				R.B.	7′-0″ x 7′- 4″	47.2		
					7′-0″ x 7′-10″	50.8		
					7′-0″ x 8′- 4″	54.4		
					7′-0″ x 8′-10″	58.0		
14	53100	75090	Single	R.B.	9′-6″ x 10′-10″	48.4	15x10	10 x10 A 8 x14 N
					9′-6″ x 11′- 4″	50.8		
					9′-6″ x 11′-10″	53.2		
			Back to Back	R.O.A.	6′-0″ x 8′-10″	48.4		
				R.B.	7′-0″ x 7′-10″	50.8		
					7′-0″ x 8′- 4″	54.4		
					7′-0″ x 8′-10″	58.0		
					7′-0″ x 9′- 4″	61.4		
					7′-0″ x 9′-10″	65.0		
					8′-6″ x 8′- 4″	66.4		
					8′-6″ x 8′-10″	70.6		

STANDARD ARRANGEMENTS

Niagara Conoidal fans are supplied in several standard arrangements as illustrated and described below. For "hand" of fan refer to page 21 and for position of openings to pages 49 to 63.


No. 1


No. 3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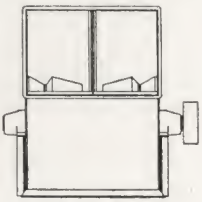
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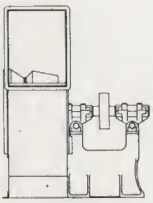
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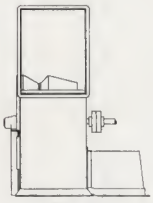
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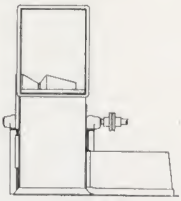
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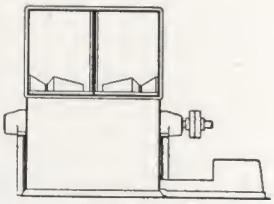

No. 8

No. 1. FOR BELT DRIVE
Single fan. Pulley overhung. Includes housing, wheel, shaft, two bearings and pulley.

No. 2. FOR BELT DRIVE
Single fan. Wheel overhung. Includes housing, wheel, shaft, two bearings, pedestal and pulley.

No. 3. FOR DIRECT CONNECTION
Single fan. Includes housing, wheel and base. Wheel is overhung on engine or motor shaft.

No. 4. FOR DIRECT CONNECTION
Single fan. Includes housing, wheel, shaft, bearing in fan inlet, flanged coupling and base.

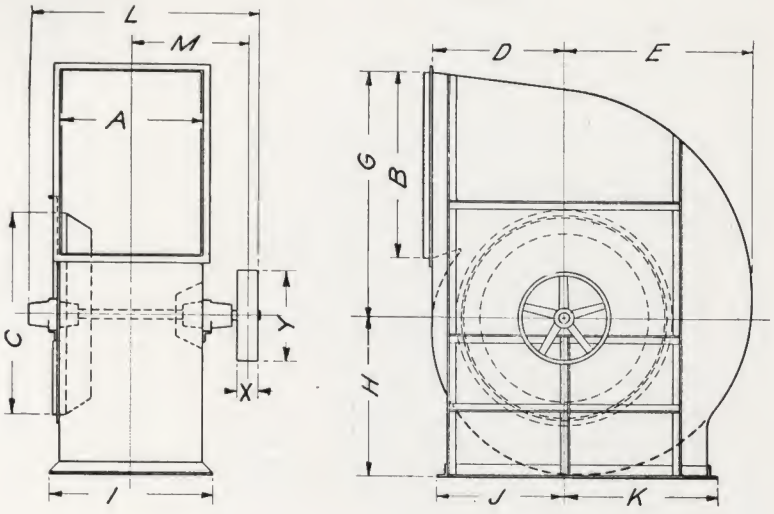
No. 5. FOR DIRECT CONNECTION
Single fan. Includes housing, wheel, shaft, bearing on drive side of fan, flanged coupling and base.

No. 6. FOR DIRECT CONNECTION
Single fan. Includes housing, wheel, shaft, two bearings, flexible coupling and base.

No. 7. FOR BELT DRIVE
Double fan. Pulley overhung. Includes housing, wheel, shaft, two bearings and pulley.

No. 8. FOR DIRECT CONNECTION
Double fan. Includes housing, wheel, shaft, two bearings, coupling and base.

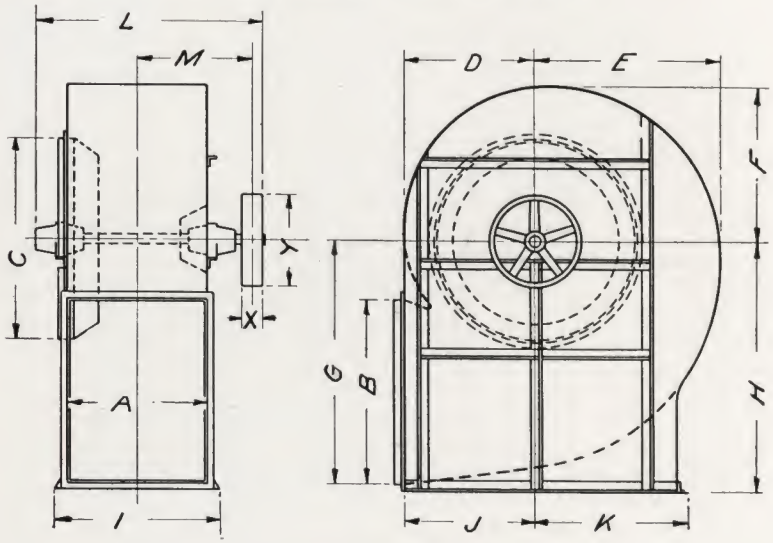
NIAGARA CONOIDAL (TYPE N) FANS



OVERHUNG PULLEY
FULL HOUSING—TOP HORIZONTAL DISCHARGE
Dimensions in Inches

Size	A	B	C	D	E	G	H	I	J	K	L	M	X	Y
3	12	15¾	17¼	11 3/16	15⅞	20 13/16	14	16¼	13¼	14	27½	15	3½	8
3½	14	18⅜	20	13	18 9/16	24¼	16½	18¼	15	16	29½	16	3½	9
4	16	21	22¾	14⅞	21 5/16	27¾	18½	20¼	17	18	31½	17	3½	10
4½	18	23⅝	25¾	16¾	23⅞	31¼	21	22¼	18¾	20	33½	18	3½	11
5	20	26¼	28½	18⅝	26½	34 11/16	23	24¼	19½	22	36	19½	3½	12
5½	22	28⅞	31½	20 7/16	29⅛	38 3/16	25	26¼	21¼	24	37	19½	3½	14
6	24	31½	34¼	22 5/16	31 13/16	41⅝	27½	28¼	23	26	41¾	22	4½	16
7	28	36¾	39¾	26	37⅛	48 9/16	32	32¼	26½	30	50	25½	5½	18
8	32	42	45½	29¾	42⅜	55½	36½	36¼	28¾	34	56	29	6½	20
9	36	47¼	51¼	33½	47 11/16	62 7/16	41	40¼	31¾	38	63½	32	8½	24
10	40	52½	56¾	37 3/16	53	69⅜	45¼	44¼	34¾	42	67½	34	8½	26
11	44	57¾	62½	40 15/16	58 5/16	76 5/16	50⅛	49¼	38⅜	46½	75½	38	8½	28
12	48	63	68	44⅝	63⅝	83¼	54¾	53¼	41⅞	50½	81	41	10	30
13	52	68¼	73½	48⅜	68⅞	90 3/16	59	58¼	45⅜	55	85½	43	11	34
14	56	73½	79	52 1/16	74 3/16	97⅛	63	62¼	47⅜	59	95½	48	13	36
15	60	78¾	84¾	55¾	79½	104 1/16	67½	66¼	51⅜	63	100½	50	15	38
16	64	84	90¼	59½	84¾	111	72	71¼	54⅞	67½	109	54		40
17	68	89¼	96	63¼	90 1/16	117 15/16	76	76¼	58⅜	72	115	56½		44
18	72	94½	101½	66 15/16	95⅜	124⅞	80½	80¼	61⅜	76	122½	61		46
19	76	99¾	107	70 11/16	100 11/16	131 13/16	85	84¼	64⅜	80	128	63		48
20	80	105	112¾	74⅜	106	138¾	89½	88¼	67⅜	84	130	63½		50

NIAGARA CONOIDAL (TYPE N) FANS

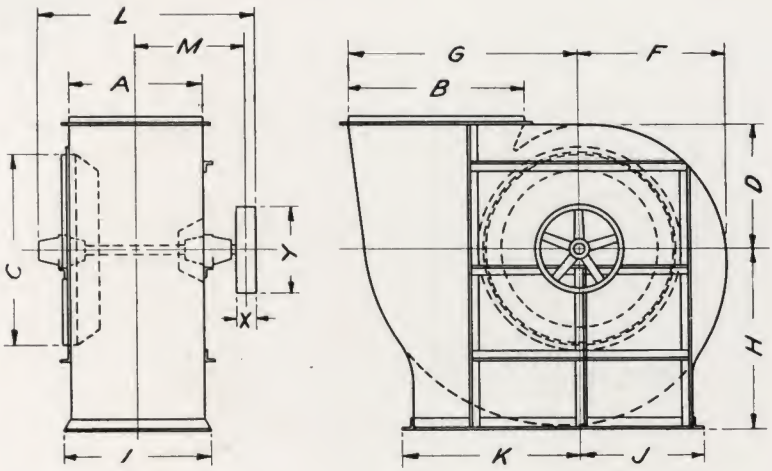


OVERHUNG PULLEY
FULL HOUSING—BOTTOM HORIZONTAL DISCHARGE

Dimensions in Inches

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	X	Y
3	12	15¾	17¼	11 3/16	15⅞	13¼	20 13/16	22	16¼	11 3/16	14	27½	15	3½	8
3½	14	18⅜	20	13	18 9/16	15 7/16	24¼	25½	18¼	13	16	29½	16	3½	9
4	16	21	22¾	14⅞	21 3/16	17⅝	27¾	29	20¼	14⅞	18	31½	17	3½	10
4½	18	23⅝	25¾	16¾	23⅞	19⅞	31¼	32½	22¼	16¾	20	33½	18	3½	11
5	20	26¼	28½	18⅝	26½	22 1/16	34 1/16	36	24¼	18⅝	22	36	19½	3½	12
5½	22	28⅞	31½	20 7/16	29⅛	24¼	38 3/16	39½	26¼	20 7/16	24	37	19½	3½	14
6	24	31½	34¼	22 5/16	31 13/16	26½	41⅝	43	28¼	22 5/16	26	41¾	22	4½	16
7	28	36¾	39¾	26	37⅛	30⅞	48 9/16	50⅜	32¼	26	30	50	25½	5½	18
8	32	42	45½	29¾	42⅜	35 5/16	55½	56¾	36¼	29¾	34	56	29	6½	20
9	36	47¼	51¼	33½	47 11/16	39¾	62 7/16	64	40¼	33½	38	63½	32	8½	24
10	40	52½	56¾	37 3/16	53	44⅛	69⅜	70¾	44¼	37 3/16	42	67½	34	8½	26
11	44	57¾	62½	40 15/16	58 5/16	48½	76 5/16	78	49¼	40 15/16	46½	75½	38	8½	28
12	48	63	68	44⅝	63⅝	52 15/16	83¼	85	53¼	44⅝	50½	81	41	10	30
13	52	68¼	73½	48⅜	68⅞	57⅜	90 3/16	92	58¼	48⅜	55	85½	43	11	34
14	56	73½	79	52 1/16	74 3/16	61¾	97⅛	99	62¼	52 1/16	59	95½	48	13	36
15	60	78¾	84¾	55¾	79½	66 3/16	104 1/16	106	66¼	55¾	63	100½	50	15	38
16	64	84	90¼	59½	84¾	70⅝	111	112½	71¼	59½	67½	109	54		40
17	68	89¼	96	63¼	90 1/16	75	117 15/16	119½	76¼	63¼	72	115	56½		44
18	72	94½	101½	66 15/16	95⅜	79 7/16	124⅞	126½	80¼	66 15/16	76	122½	61		46
19	76	99¾	107	70 11/16	100 11/16	83 13/16	131 13/16	133½	84¼	70 11/16	80	128	63		48
20	80	105	112¾	74⅜	106	88¼	138¾	140½	88¾	74⅜	84	130	63½		50

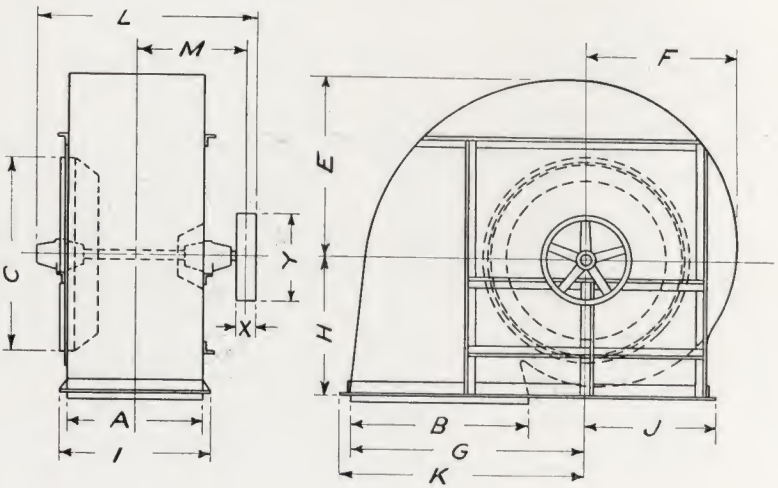
NIAGARA CONOIDAL (TYPE N) FANS



OVERHUNG PULLEY
FULL HOUSING—UP DISCHARGE
Dimensions in Inches

Size	A	B	C	D	F	G	H	I	J	K	L	M	X	Y
3	12	15¾	17¼	11 3/16	13¼	20 13/16	17	16¼	13¼	17	27½	15	3½	8
3½	14	18⅜	20	13	15 7/16	24¼	19½	18¼	15	19½	29½	16	3½	9
4	16	21	22¾	14⅞	17⅝	27¾	22½	20¼	17	22	31½	17	3½	10
4½	18	23⅝	25¾	16¾	19⅞	31¼	25	22¼	18¾	24½	33½	18	3½	11
5	20	26¼	28½	18⅝	22 1/16	34 11/16	27½	24¼	19½	27	36	19½	3½	12
5½	22	28⅞	31½	20 7/16	24¼	38 3/16	30	26¼	21¼	29½	37	19½	3½	14
6	24	31½	34¼	22 5/16	26½	41⅝	33	28¼	23	32	41¾	22	4½	16
7	28	36¾	39¾	26	30⅞	48 9/16	38½	32¼	26½	37	50	25½	5½	18
8	32	42	45½	29¾	35 5/16	55½	44	36¼	28¾	42	56	29	6½	20
9	36	47¼	51¼	33½	39¾	62 7/16	49	40¼	31¾	47	63½	32	8½	24
10	40	52½	56¾	37 3/16	44⅛	69⅜	54	44¼	34¾	52	67½	34	8½	26
11	44	57¾	62½	40 13/16	48½	76 5/16	59½	49¼	38⅜	57½	75½	38	8½	28
12	48	63	68	44⅝	52 15/16	83¼	65½	53¼	41⅞	62½	81	41	10	30
13	52	68¼	73½	48⅜	57⅜	90 3/16	70	58¼	45⅜	68	85½	43	11	34
14	56	73½	79	52 1/16	61¾	97⅛	75½	62¼	47⅜	73	95½	48	13	36
15	60	78¾	84¾	55¾	66 3/16	104 1/16	80½	66¼	51⅜	78	100½	50	15	38
16	64	84	90¼	59½	70⅝	111	86	71¼	54⅞	83½	109	54		40
17	68	89¼	96	63¼	75	117 15/16	91	76¼	58⅜	89	115	56½		44
18	72	94½	101½	66 13/16	79 7/16	124⅞	96½	80¼	61⅜	94	122½	61		46
19	76	99¾	107	70 11/16	83 13/16	131 13/16	102	84¼	64⅜	99	128	63		48
20	80	105	112¾	74⅜	88¼	138¾	107	88¼	67⅜	104	130	63½		50

NIAGARA CONOIDAL (TYPE N) FANS

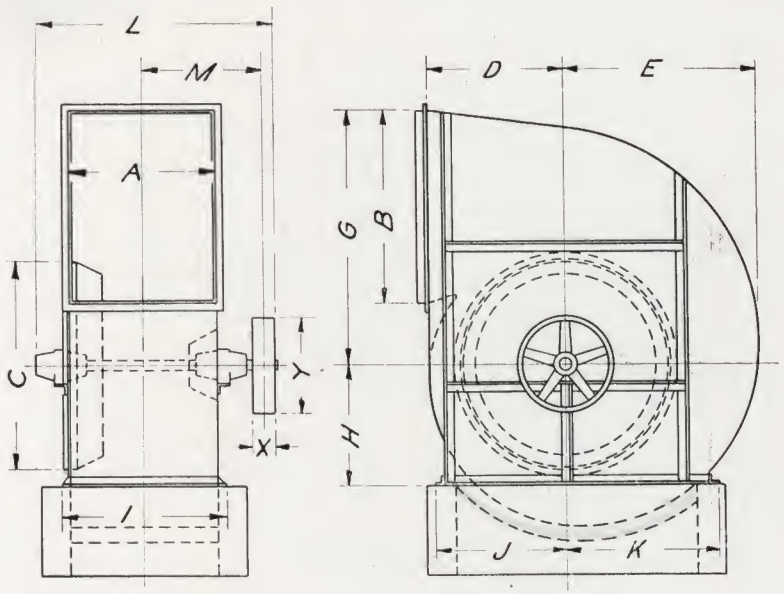


OVERHUNG PULLEY
FULL HOUSING—DOWN DISCHARGE

Dimensions in Inches

Size	A	B	C	E	F	G	H	I	J	K	L	M	X	Y
3	12	15 3/4	17 1/4	15 7/8	13 1/4	20 13/16	12	16 1/4	13 1/4	22 13/16	27 1/2	15	3 1/2	8
3 1/2	14	18 3/8	20	18 9/16	15 7/16	24 1/4	14	18 1/4	15	26 1/4	29 1/2	16	3 1/2	9
4	16	21	22 3/4	21 3/16	17 5/8	27 3/4	16	20 1/4	17	29 3/4	31 1/2	17	3 1/2	10
4 1/2	18	23 5/8	25 3/4	23 7/8	19 7/8	31 1/4	18	22 1/4	18 3/4	33 1/4	33 1/2	18	3 1/2	11
5	20	26 1/4	28 1/2	26 1/2	22 1/16	34 11/16	20	24 1/4	19 1/2	36 11/16	36	19 1/2	3 1/2	12
5 1/2	22	28 7/8	31 1/2	29 1/8	24 1/4	38 3/16	21 1/2	26 1/4	21 1/4	40 3/16	37	19 1/2	3 1/2	14
6	24	31 1/2	34 1/4	31 13/16	26 1/2	41 5/8	23 1/2	28 1/4	23	43 5/8	41 3/4	22	4 1/2	16
7	28	36 3/4	39 3/4	37 1/8	30 7/8	48 9/16	27	32 1/4	26 1/2	50 9/16	50	25 1/2	5 1/2	18
8	32	42	45 1/2	42 3/8	35 5/16	55 1/2	32	36 1/4	28 3/4	57 1/2	56	29	6 1/2	20
9	36	47 1/4	51 1/4	47 11/16	39 3/4	62 7/16	34 3/4	40 1/4	31 3/4	64 7/16	63	32	8 1/2	24
10	40	52 1/2	56 3/4	53	44 1/8	69 3/8	38 1/2	44 1/4	34 3/4	71 3/8	67 1/2	34	8 1/2	26
11	44	57 3/4	62 1/2	58 5/16	48 1/2	76 5/16	42	49 1/4	38 3/8	78 13/16	75 1/2	38	8 1/2	28
12	48	63	68	63 5/8	52 15/16	83 1/4	46	53 1/4	41 7/8	85 3/4	81	41	10	30
13	52	68 1/4	73 1/2	68 7/8	57 3/8	90 3/16	49 1/2	58 1/4	45 3/8	93 3/16	85 1/2	43	11	34
14	56	73 1/2	79	74 3/16	61 3/4	97 1/8	53	62 1/4	47 3/8	100 1/8	95 1/2	48	13	36
15	60	78 3/4	84 3/4	79 1/2	66 3/16	104 1/16	57	66 1/4	51 3/8	107 1/16	100 1/2	50	15	38
16	64	84	90 1/4	84 3/4	70 5/8	111	60 1/2	71 1/4	54 7/8	114 1/2	109	54		40
17	68	89 1/4	96	90 1/16	75	117 15/16	64 1/2	76 1/4	58 3/8	121 15/16	115	56 1/2		44
18	72	94 1/2	101 1/2	95 3/8	79 7/16	124 7/8	68	80 1/4	61 3/8	128 7/8	122 1/2	61		46
19	76	99 3/4	107	100 11/16	83 13/16	131 13/16	72	84 1/4	64 3/8	135 13/16	128	63		48
20	80	105	112 3/4	106	88 1/4	138 3/4	75 1/2	88 1/4	67 3/8	142 3/4	130	63 1/2		50

NIAGARA CONOIDAL (TYPE N) FANS



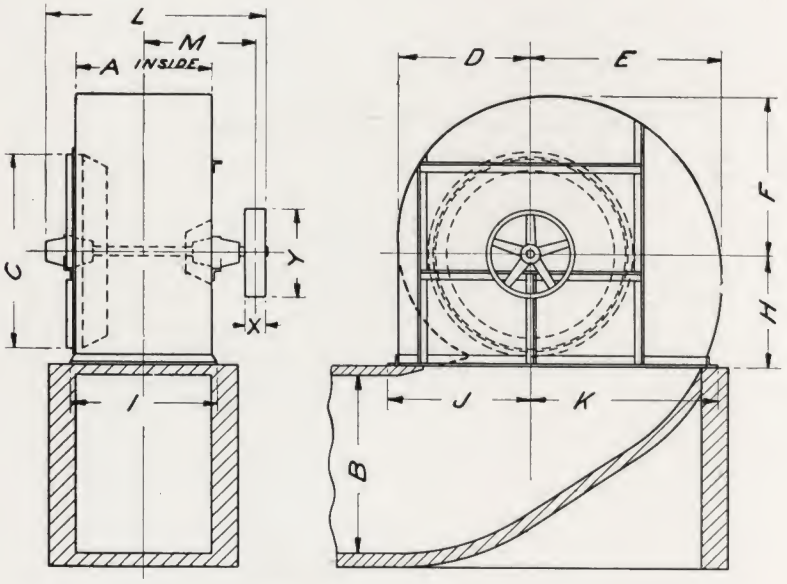
OVERHUNG PULLEY

THREE-QUARTER HOUSING—TOP HORIZONTAL DISCHARGE

Dimensions in Inches

Size	A	B	C	D	E	G	H	I	J	K	L	M	X	Y
6	24	31½	34¼	22 5/16	31 13/16	41 5/8	21	28¼	23	24 11/16	41¾	22	4½	16
7	28	36¾	39¾	26	37⅛	48 9/16	23¾	32¼	26½	28¾	50	25½	5½	18
8	32	42	45½	29¾	42⅜	55½	27	36¼	28¾	32⅞	56	29	6½	20
9	36	47¼	51¼	33½	47 11/16	62 7/16	30	40¼	31¾	36 11/16	63½	32	8½	24
10	40	52½	56¾	37 9/16	53	69⅜	32¾	44¼	34¾	40⅞	67½	34	8½	26
11	44	57¾	62½	40 15/16	58 5/16	76 5/16	36	49¼	38⅜	45½	75½	38	8½	28
12	48	63	68	44⅝	63⅝	83¼	38¾	53¼	41⅞	49½	81	41	10	30
13	52	68¼	73½	48⅜	68⅞	90 3/16	42	58¼	45⅜	54 3/16	85½	43	11	34
14	56	73½	79	52 1/16	74 3/16	97⅛	44¾	62¼	47⅜	58¼	95½	48	13	36
15	60	78¾	84¾	55¾	79½	104 1/16	47¾	66¼	51⅜	62⅛	100½	50	15	38
16	64	84	90¼	59½	84¾	111	51½	71¼	54⅞	66¾	109	54		40
17	68	89¼	96	63¼	90 1/16	117 15/16	54¼	76¼	58⅜	71 5/16	115	56½		44
18	72	94½	101½	66 15/16	95⅜	124⅞	57	80¼	61⅜	75 7/16	122½	61		46
19	76	99¾	107	70 11/16	100 11/16	131 13/16	59¾	84¼	64⅜	79½	128	63		48
20	80	105	112¾	74⅜	106	138¾	62¾	88¼	67⅜	83⅜	130	63½		50

NIAGARA CONOIDAL (TYPE N) FANS



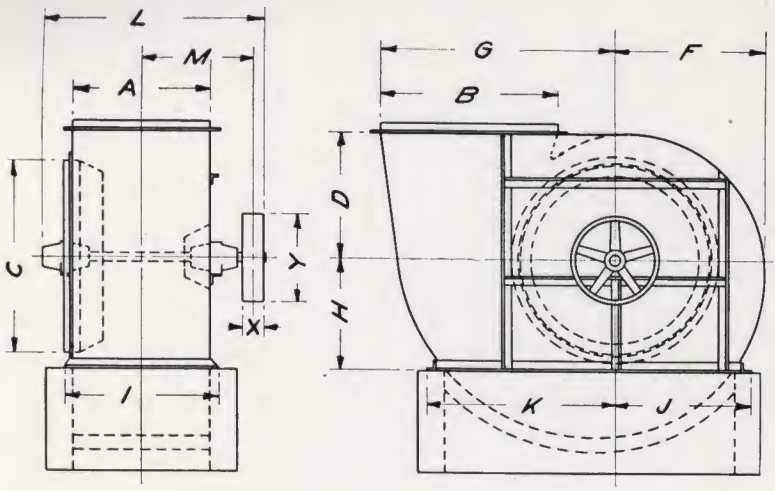
OVERHUNG PULLEY

THREE-QUARTER HOUSING—BOTTOM HORIZONTAL DISCHARGE

Dimensions in Inches

Size	A	B	C	D	E	F	H	I	J	K	L	M	X	Y
6	24	31½	34¼	23⅜	33 11/16	27⅞	21	28¼	25⅜	32⅞	41¾	22	4½	16
7	28	36¾	39¾	27 5/16	39¼	32 7/16	23¾	32¼	29 5/16	38⅛	50	25½	5½	18
8	32	42	45½	31 3/16	44 13/16	37⅛	27	36¼	33 3/16	43⅜	56	29	6½	20
9	36	47¼	51¼	35 1/16	50 7/16	41¾	30	40¼	37 1/16	48 9/16	63½	32	8½	24
10	40	52½	56¾	39	56 1/16	46⅜	32¾	44¼	41	53⅞	67½	34	8½	26
11	44	57¾	62½	42⅞	61 11/16	51	36	49¼	45⅜	59⅝	75½	38	8½	28
12	48	63	68	46¾	67 5/16	55 11/16	38¾	53¼	49¼	64⅞	81	41	10	30
13	52	68¼	73½	50 11/16	72⅞	60 5/16	42	58¼	53 11/16	70¾	85½	43	11	34
14	56	73½	79	54 9/16	78½	64 13/16	44¾	62¼	57 9/16	75 13/16	95½	48	13	36
15	60	78¾	84¾	58 7/16	84 1/16	69 9/16	47¾	66¼	61 7/16	81⅛	100½	50	15	38
16	64	84	90¼	62⅜	89 11/16	74¼	51½	71¼	65⅞	86⅞	109	54		40
17	68	89¼	96	66¼	95 5/16	78⅞	54¼	76¼	70¼	92 11/16	115	56½		44
18	72	94½	101½	70⅛	100 15/16	83½	57	80¼	74⅛	97 15/16	122½	61		46
19	76	99¾	107	74 1/16	106½	88⅛	59¾	84¼	78 1/16	103¼	128	63		48
20	80	105	112¾	77 15/16	112⅛	92 13/16	62¾	88¼	81 15/16	108⅜	130	63½		50

NIAGARA CONOIDAL (TYPE N) FANS



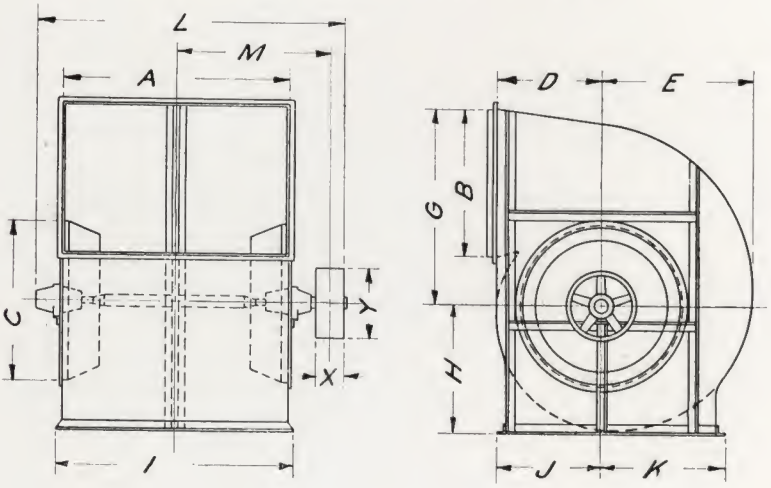
OVERHUNG PULLEY

THREE-QUARTER HOUSING—UP DISCHARGE

Dimensions in Inches

Size	A	B	C	D	F	G	H	I	J	K	L	M	X	Y
6	24	31 1/2	34 1/4	22 5/16	26 1/2	41 5/8	21	28 1/4	23 3/4	33 1/4	41 3/4	22	4 1/2	16
7	28	36 3/4	39 3/4	26	30 7/8	48 9/16	23 3/4	32 1/4	27 5/8	38 5/8	50	25 1/2	5 1/2	18
8	32	42	45 1/2	29 3/4	35 5/16	55 1/2	27	36 1/4	31 1/2	44 1/8	56	29	6 1/2	20
9	36	47 1/4	51 1/4	33 1/2	39 3/4	62 7/16	30	40 1/4	35 1/8	49 3/8	63 1/2	32	8 1/2	24
10	40	52 1/2	56 3/4	37 3/16	44 1/8	69 3/8	32 3/4	44 1/4	39	54 7/8	67 1/2	34	8 1/2	26
11	44	57 3/4	62 1/2	40 15/16	48 1/2	76 5/16	36	49 1/4	43 5/16	60 3/4	75 1/2	38	8 1/2	28
12	48	63	68	44 5/8	52 15/16	83 1/4	38 3/4	53 1/4	47 1/8	66 1/4	81	41	10	30
13	52	68 1/4	73 1/2	48 3/8	57 3/8	90 3/16	42	58 1/4	51 1/2	72 1/4	85 1/2	43	11	34
14	56	73 1/2	79	52 1/16	61 3/4	97 1/8	44 3/4	62 1/4	55 1/4	77 5/8	95 1/2	48	13	36
15	60	78 3/4	84 3/4	55 3/4	66 3/16	104 1/16	47 3/4	66 1/4	59	82 7/8	100 1/2	50	15	38
16	64	84	90 1/4	59 1/2	70 5/8	111	51 1/2	71 1/4	63 5/16	88 7/8	109	54		40
17	68	89 1/4	96	63 1/4	75	117 15/16	54 1/4	76 1/4	67 5/8	94 13/16	115	56 1/2		44
18	72	94 1/2	101 1/2	66 15/16	79 7/16	124 7/8	57	80 1/4	71 1/2	100 1/4	122 1/2	61		46
19	76	99 3/4	107	70 11/16	83 13/16	131 13/16	59 3/4	84 1/4	75 1/4	105 3/4	128	63		48
20	80	105	112 3/4	74 3/8	88 1/4	138 3/4	62 3/4	88 1/4	79	111	130	63 1/2		50

NIAGARA CONOIDAL (TYPE N) FANS

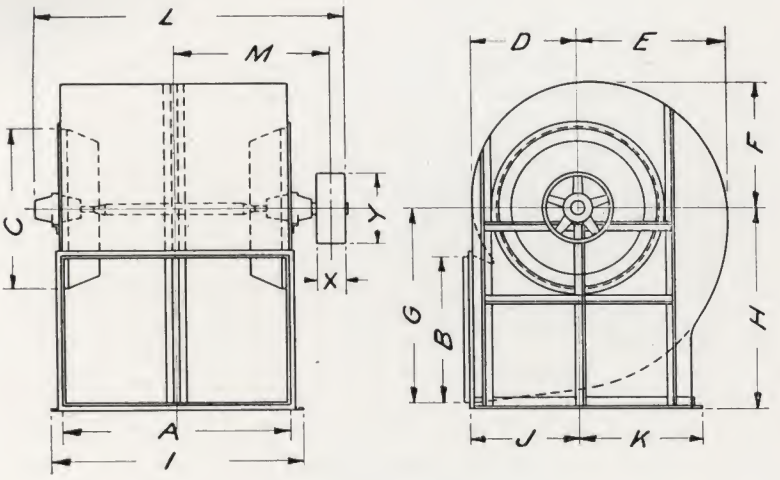


DOUBLE WIDTH
FULL HOUSING—TOP HORIZONTAL DISCHARGE

Dimensions in Inches

Size	A	B	C	D	E	G	H	I	J	K	L	M	X	Y
3	24	15¾	17¼	11 3/16	15⅞	20 13/16	14	28¼	13¼	14	38	19½	3½	8
3½	28	18⅜	20	13	18 9/16	24¼	16½	32¼	15	16	42	21½	3½	9
4	32	21	22¾	14⅞	21 3/16	27¾	18½	36¼	17	18	46	23½	3½	10
4½	36	23⅝	25¾	16¾	23⅞	31¼	21	40¼	18¾	20	51	26	4½	11
5	40	26¼	28½	18⅝	26½	34 11/16	23	44¼	19½	22	56	28½	5½	12
5½	44	28⅞	31½	20 7/16	29⅛	38 3/16	25	48¼	21¼	24	61	31	6½	14
6	48	31½	34¼	22 5/16	31 13/16	41⅝	27½	52¼	23	26	66¾	34	6½	16
7	56	36¾	39¾	26	37⅛	48 9/16	32	60¼	26½	30	79⅝	40	8½	18
8	64	42	45½	29¾	42⅜	55½	36½	68¼	28¾	34	90½	45½	10	20
9	72	47¼	51¼	33½	47 11/16	62 7/16	41	76¼	31¾	38	102	51	11	24
10	80	52½	56¾	37 5/16	53	69⅜	45¼	84¼	34¾	42	111	55	13	26
11	88	57¾	62½	40 15/16	58 5/16	76 5/16	50⅛	93¼	38⅜	46½	125	62	16	28
12	96	63	68	44⅝	63⅝	83¼	54¾	101¼	41⅞	50½	138½	68		30
13	104	68¼	73½	48⅜	68⅞	90 3/16	59	110¼	45⅜	55	147	72		34
14	112	73½	79	52 1/16	74 3/16	97⅛	63	118¼	47⅜	59	159	78		36
15	120	78¾	84¾	55¾	79½	104 1/16	67½	126¼	51⅜	63	167½	83		38
16	128	84	90¼	59½	84¾	111	72	135¼	54⅞	67½	180	88½		40
17	136	89¼	96	63¼	90 1/16	117 15/16	76	144¼	58⅜	72	188½	92½		44
18	144	94½	101½	66 15/16	95⅜	124⅞	80½	152¼	61⅜	76	195	96		46
19	152	99¾	107	70 11/16	100 11/16	131 13/16	85	160¼	64⅜	80	202	100½		48
20	160	105	112¾	74⅜	106	138¾	89½	168¼	67⅜	84	213	104½		50

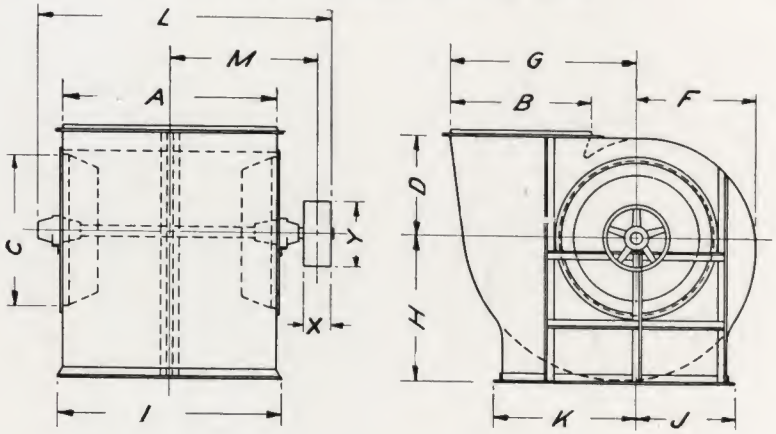
NIAGARA CONOIDAL (TYPE N) FANS



DOUBLE WIDTH
FULL HOUSING—BOTTOM HORIZONTAL DISCHARGE
Dimensions in Inches

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	X	Y
3	24	15 3/4	17 1/4	11 3/16	15 7/8	13 1/4	20 1/16	22	28 1/4	11 3/16	14	38	19 1/2	3 1/2	8
3 1/2	28	18 3/8	20	13	18 9/16	15 7/16	24 1/4	25 1/2	32 1/4	13	16	42	21 1/2	3 1/2	9
4	32	21	22 3/4	14 7/8	21 3/16	17 5/8	27 3/4	29	36 1/4	14 7/8	18	46	23 1/2	3 1/2	10
4 1/2	36	23 5/8	25 3/4	16 3/4	23 7/8	19 7/8	31 1/4	32 1/2	40 1/4	16 3/4	20	51	26	4 1/2	11
5	40	26 1/4	28 1/2	18 5/8	26 1/2	22 1/16	34 11/16	36	44 1/4	18 5/8	22	56	28 1/2	5 1/2	12
5 1/2	44	28 7/8	31 1/2	20 7/16	29 1/8	24 1/4	38 3/16	39 1/2	48 1/4	20 7/16	24	61	31	6 1/2	14
6	48	31 1/2	34 1/4	22 5/16	31 13/16	26 1/2	41 5/8	43	52 1/4	22 5/16	26	66 3/4	34	6 1/2	16
7	56	36 3/4	39 3/4	26	37 1/8	30 7/8	48 9/16	50 3/8	60 1/4	26	30	79 5/8	40	8 1/2	18
8	64	42	45 1/2	29 3/4	42 3/8	35 5/16	55 1/2	56 3/4	68 1/4	29 3/4	34	90 1/2	45 1/2	10	20
9	72	47 1/4	51 1/4	33 1/2	47 11/16	39 3/4	62 7/16	64	76 1/4	33 1/2	38	102	51	11	24
10	80	52 1/2	56 3/4	37 3/16	53	44 1/8	69 3/8	70 3/4	84 1/4	37 3/16	42	111	55	13	26
11	88	57 3/4	62 1/2	40 13/16	58 5/16	48 1/2	76 5/16	78	93 1/4	40 13/16	46 1/2	125	62	16	28
12	96	63	68	44 5/8	63 5/8	52 15/16	83 1/4	85	101 1/4	44 5/8	50 1/2	138 1/2	68		30
13	104	68 1/4	73 1/2	48 3/8	68 7/8	57 3/8	90 3/16	92	110 1/4	48 3/8	55	147	72		34
14	112	73 1/2	79	52 1/16	74 3/16	61 3/4	97 1/8	99	118 1/4	52 1/16	59	159	78		36
15	120	78 3/4	84 3/4	55 3/4	79 1/2	66 3/16	104 1/16	106	126 1/4	55 3/4	63	167 1/2	83		38
16	128	84	90 1/4	59 1/2	84 3/4	70 5/8	111	112 1/2	135 1/4	59 1/2	67 1/2	180	88 1/2		40
17	136	89 1/4	96	63 1/4	90 1/16	75	117 15/16	119 1/2	144 1/4	63 1/4	72	188 1/2	92 1/2		44
18	144	94 1/2	101 1/2	66 15/16	95 3/8	79 7/16	124 7/8	126 1/2	152 1/4	66 15/16	76	195	96		46
19	152	99 3/4	107	70 11/16	100 11/16	83 13/16	131 3/16	133 1/2	160 1/4	70 11/16	80	202	100 1/2		48
20	160	105	112 3/4	74 3/8	106	88 1/4	138 3/4	140 1/2	168 1/4	74 3/8	84	213	104 1/2		50

NIAGARA CONOIDAL (TYPE N) FANS

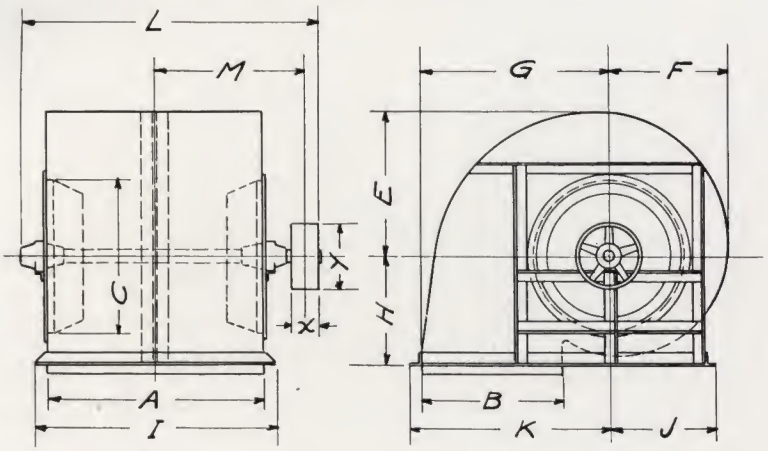


DOUBLE WIDTH
FULL HOUSING—UP DISCHARGE

Dimensions in Inches

Size	A	B	C	D	F	G	H	I	J	K	L	M	X	Y
3	24	15 3/4	17 1/4	11 3/16	13 1/4	20 13/16	17	28 1/4	13 1/4	17	38	19 1/2	3 1/2	8
3 1/2	28	18 3/8	20	13	15 1/16	24 1/4	19 1/2	32 1/4	15	19 1/2	42	21 1/2	3 1/2	9
4	32	21	22 3/4	14 7/8	17 5/8	27 3/4	22 1/2	36 1/4	17	22	46	23 1/2	3 1/2	10
4 1/2	36	23 5/8	25 3/4	16 3/4	19 7/8	31 1/4	25	40 1/4	18 3/4	24 1/2	51	26	4 1/2	11
5	40	26 1/4	28 1/2	18 5/8	22 1/16	34 11/16	27 1/2	44 1/4	19 1/2	27	56	28 1/2	5 1/2	12
5 1/2	44	28 7/8	31 1/2	20 7/16	24 1/4	38 3/16	30	48 1/4	21 1/4	29 1/2	61	31	6 1/2	14
6	48	31 1/2	34 1/4	22 5/16	26 1/2	41 5/8	33	52 1/4	23	32	66 3/4	34	6 1/2	16
7	56	36 3/4	39 3/4	26	30 7/8	48 9/16	38 1/2	60 1/4	26 1/2	37	79 5/8	40	8 1/2	18
8	64	42	45 1/2	29 3/4	35 5/16	55 1/2	44	68 1/4	28 3/4	42	90 1/2	45 1/2	10	20
9	72	47 1/4	51 1/4	33 1/2	39 3/4	62 7/16	49	76 1/4	31 3/4	47	102	51	11	24
10	80	52 1/2	56 3/4	37 3/16	44 1/8	69 3/8	54	84 1/4	34 3/4	52	111	55	13	26
11	88	57 3/4	62 1/2	40 15/16	48 1/2	76 5/16	59 1/2	93 1/4	38 3/8	57 1/2	125	62	16	28
12	96	63	68	44 5/8	52 15/16	83 1/4	65 1/2	101 1/4	41 7/8	62 1/2	138 1/2	68		30
13	104	68 1/4	73 1/2	48 3/8	57 3/8	90 3/16	70	110 1/4	45 3/8	68	147	72		34
14	112	73 1/2	79	52 1/16	61 3/4	97 1/8	75 1/2	118 1/4	47 3/8	73	159	78		36
15	120	78 3/4	84 3/4	55 3/4	66 3/16	104 1/16	80 1/2	126 1/4	51 3/8	78	167 1/2	83		38
16	128	84	90 1/4	59 1/2	70 5/8	111	86	135 1/4	54 7/8	83 1/2	180	88 1/2		40
17	136	89 1/4	96	63 1/4	75	117 15/16	91	144 1/4	58 3/8	89	188 1/2	92 1/2		44
18	144	94 1/2	101 1/2	66 15/16	79 7/16	124 7/8	96 1/2	152 1/4	61 3/8	94	195	96		46
19	152	99 3/4	107	70 11/16	83 13/16	131 13/16	102	160 1/4	64 3/8	99	202	100 1/2		48
20	160	105	112 3/4	74 3/8	88 1/4	138 3/4	107	168 1/4	67 3/8	104	213	104 1/2		50

NIAGARA CONOIDAL (TYPE N) FANS

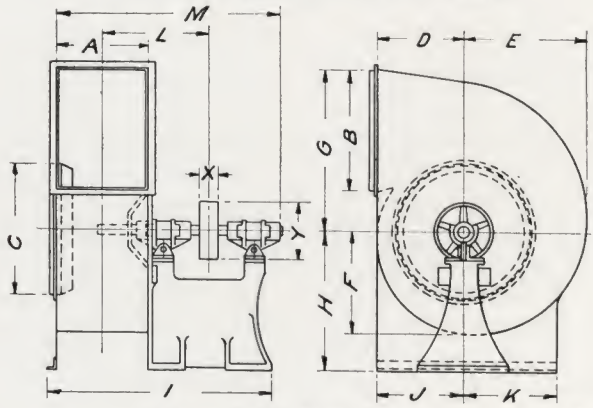


DOUBLE WIDTH
FULL HOUSING—DOWN DISCHARGE

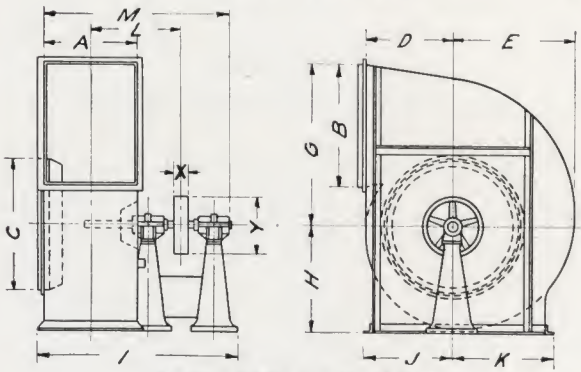
Dimensions in Inches

Size	A	B	C	E	F	G	H	I	J	K	L	M	X	Y
3	24	15 3/4	17 1/4	15 7/8	13 1/4	20 13/16	12	28 1/4	13 1/4	22 13/16	38	19 1/2	3 1/2	8
3 1/2	28	18 3/8	20	18 9/16	15 7/16	24 1/4	14	32 1/4	15	26 1/4	42	21 1/2	3 1/2	9
4	32	21	22 3/4	21 3/16	17 5/8	27 3/4	16	36 1/4	17	29 3/4	46	23 1/2	3 1/2	10
4 1/2	36	23 5/8	25 3/4	23 7/8	19 7/8	31 1/4	18	40 1/4	18 3/4	33 1/4	51	26	4 1/2	11
5	40	26 1/4	28 1/2	26 1/2	22 1/16	34 11/16	20	44 1/4	19 1/2	36 11/16	56	28 1/2	5 1/2	12
5 1/2	44	28 7/8	31 1/2	29 1/8	24 1/4	38 3/16	21 1/2	48 1/4	21 1/4	40 3/16	61	31	6 1/2	14
6	48	31 1/2	34 1/4	31 13/16	26 1/2	41 5/8	23 1/2	52 1/4	23	43 5/8	66 3/4	34	6 1/2	16
7	56	36 3/4	39 3/4	37 1/8	30 7/8	48 9/16	27	60 1/4	26 1/2	50 9/16	79 5/8	40	8 1/2	18
8	64	42	45 1/2	42 3/8	35 5/16	55 1/2	32	68 1/4	28 3/4	57 1/2	90 1/2	45 1/2	10	20
9	72	47 1/4	51 1/4	47 11/16	39 3/4	62 7/16	34 3/4	76 1/4	31 3/4	64 7/16	102	51	11	24
10	80	52 1/2	56 3/4	53	44 1/8	69 3/8	38 1/2	84 1/4	34 3/4	71 3/8	111	55	13	26
11	88	57 3/4	62 1/2	58 5/16	48 1/2	76 5/16	42	93 1/4	38 3/8	78 13/16	125	62	16	28
12	96	63	68	63 5/8	52 15/16	83 1/4	46	101 1/4	41 7/8	85 3/4	138 1/2	68		30
13	104	68 1/4	73 1/2	68 7/8	57 3/8	90 3/16	49 1/2	110 1/4	45 3/8	93 3/16	147	72		34
14	112	73 1/2	79	74 3/16	61 3/4	97 1/8	53	118 1/4	47 3/8	100 1/8	159	78		36
15	120	78 3/4	84 3/4	79 1/2	66 3/16	104 1/16	57	126 1/4	51 3/8	107 1/16	167 1/2	83		38
16	128	84	90 1/4	84 3/4	70 5/8	111	60 1/2	135 1/4	54 7/8	114 1/2	180	88 1/2		40
17	136	89 1/4	96	90 1/16	75	117 15/16	64 1/2	144 1/4	58 3/8	121 15/16	188 1/2	92 1/2		44
18	144	94 1/2	101 1/2	95 3/8	79 7/16	124 7/8	68	152 1/4	61 3/8	128 7/8	195	96		46
19	152	99 3/4	107	100 11/16	83 13/16	131 13/16	72	160 1/4	64 3/8	135 13/16	202	100 1/2		48
20	160	105	112 3/4	106	88 1/4	138 3/4	75 1/2	168 1/4	67 3/8	142 3/4	213	104 1/2		50

NIAGARA CONOIDAL (TYPE N) FANS



This Style for No. 3 to No. 6 Fans



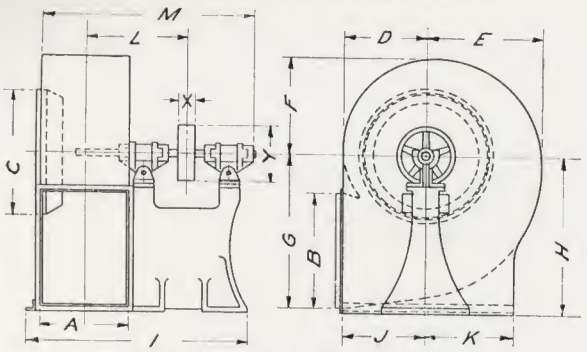
This Style for No. 7 to No. 13 Fans

OVERHUNG WHEEL
FULL HOUSING—TOP HORIZONTAL DISCHARGE

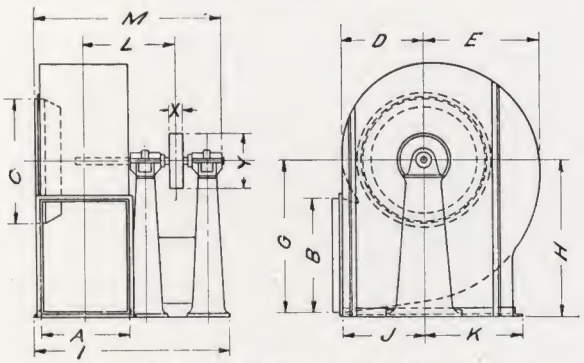
Dimensions in Inches

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	X	Y
3	12	15 3/4	17 1/4	11 3/16	15 7/8	13 1/4	20 13/16	18	32 1/4	11 3/16	12	14 7/8	31 3/8	3 1/2	8
3 1/2	14	18 3/8	20	13	18 9/16	15 7/16	24 1/4	20 3/4	36 9/16	13	14	16 3/8	34 1/2	3 1/2	9
4	16	21	22 3/4	14 7/8	21 3/16	17 5/8	27 3/4	24	40	14 7/8	16	18 3/8	38 3/4	3 1/2	10
4 1/2	18	23 5/8	25 3/4	16 3/4	23 7/8	19 7/8	31 1/4	26 5/8	43 3/4	16 3/4	18	20 1/2	43 1/2	3 1/2	11
5	20	26 1/4	28 1/2	18 5/8	26 1/2	22 1/16	34 11/16	29 1/4	47 5/16	17 1/2	20	22	46 1/2	3 1/2	12
5 1/2	22	28 7/8	31 1/2	20 7/16	29 1/8	24 1/4	38 3/16	32	51 1/4	19 1/4	22	24 1/8	50 3/4	3 1/2	14
6	24	31 1/2	34 1/4	22 5/16	31 13/16	26 1/2	41 5/8	35	54 1/4	21	24	25 5/8	53 3/4	4 1/2	16
7	28	36 3/4	39 3/4	26	37 1/8		48 9/16	32	60	26 1/2	30	28 3/8	60	5 1/2	18
8	32	42	45 1/2	29 3/4	42 3/8		55 1/2	36 1/2	64	28 3/4	34	30 3/8	64	6 1/2	20
9	36	47 1/4	51 1/4	33 1/2	47 11/16		62 7/16	41	68	31 3/4	38	32 3/8	69	8 1/2	24
10	40	52 1/2	56 3/4	37 3/16	53		69 3/8	45 1/4	85 3/4	34 3/4	42	40 5/8	84 1/2	8 1/2	26
11	44	57 3/4	62 1/2	40 15/16	58 5/16		76 5/16	50 1/8	90 1/4	38 3/8	46 1/2	42 5/8	88 1/2	8 1/2	28
12	48	63	68	44 5/8	63 5/8		83 1/4	54 3/4	94 1/4	41 7/8	50 1/2	44 5/8	93 1/2	10	30
13	52	68 1/4	73 1/2	48 3/8	68 7/8		90 3/16	59	98 3/4	45 3/8	55	46 5/8	97 1/2	11	34

NIAGARA CONOIDAL (TYPE N) FANS



This Style for No. 3 to No. 6 Fans



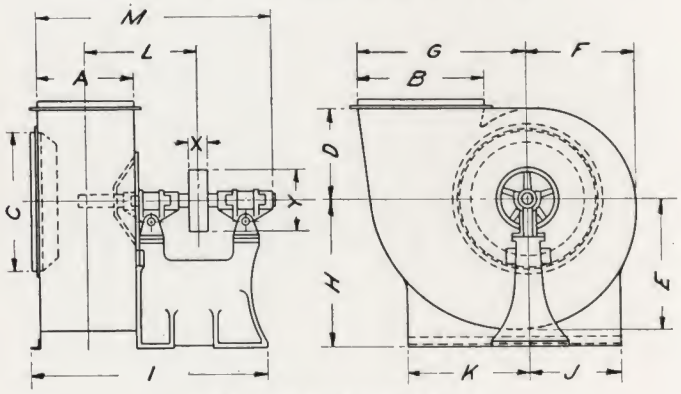
This Style for No. 7 to No. 10 Fans

OVERHUNG WHEEL
FULL HOUSING—BOTTOM HORIZONTAL DISCHARGE

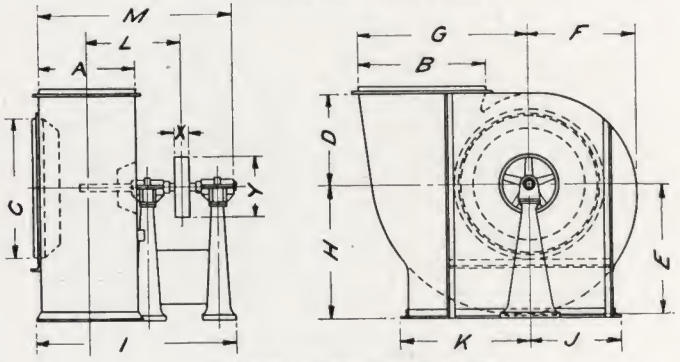
Dimensions in Inches

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	X	Y
3	12	15¾	17¼	11 3/16	15⅞	13¼	20 13/16	23⅜	32	11 3/16	12	14⅞	31⅜	3½	8
3½	14	18⅜	20	13	18 9/16	15 7/16	24¼	27¼	36¾	13	14	16⅜	34½	3½	9
4	16	21	22¾	14⅞	21 3/16	17⅝	27¾	30⅝	39¾	14⅞	16	18⅜	38¾	3½	10
4½	18	23⅝	25¾	16¾	23⅞	19⅞	31¼	34½	43¾	16¾	18	20½	43½	3½	11
5	20	26¼	28½	18⅝	26½	22 1/16	34 11/16	38½	48	18⅝	20	22	46½	3½	12
5½	22	28⅞	31½	20 7/16	29⅛	24¼	38 3/16	41⅞	51	20 7/16	22	24⅛	50¾	3½	14
6	24	31½	34¼	22 5/16	31 13/16	26½	41⅝	45¾	54	22 5/16	24	25⅝	53¾	4½	16
7	28	36¾	39¾	26	37⅛	30⅞	48 9/16	50⅜	66¾	28	30	31⅛	64	5½	18
8	32	42	45½	29¾	42⅜	35 5/16	55½	56¾	70¾	31¾	34	33⅛	68	6½	20
9	36	47¼	51¼	33½	47 11/16	39¾	62 7/16	64	77¾	35½	38	36⅝	76	8½	24
10	40	52½	56¾	37 3/16	53	44⅛	69⅜	70¾	85¾	39 3/16	42	40⅝	85½	8½	26

NIAGARA CONOIDAL (TYPE N) FANS



This Style for No. 3 to No. 6 Fans

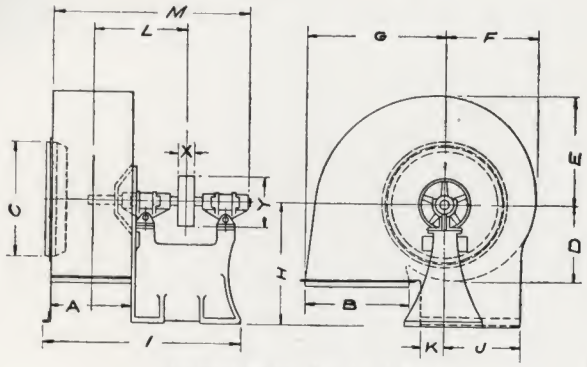


This Style for No. 7 to No. 13 Fans

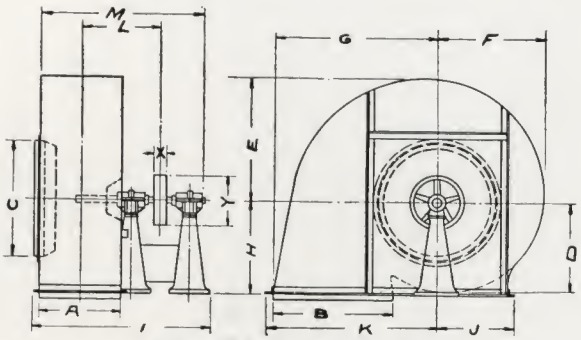
OVERHUNG WHEEL
FULL HOUSING—UP DISCHARGE
Dimensions in Inches

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	X	Y
3	12	15¾	17¼	11 3/16	15⅞	13¼	20 13/16	18	32¼	11¼	15	14⅞	31⅜	3½	8
3½	14	18⅜	20	13	18 9/16	15 7/16	24¼	20¾	36 9/16	13	17½	16⅜	34½	3½	9
4	16	21	22¾	14⅞	21 3/16	17⅝	27¾	24	40	15	20	18⅜	38¾	3½	10
4½	18	23⅝	25¾	16¾	23⅞	19⅞	31¼	26⅝	43¾	16¾	22½	20½	43½	3½	11
5	20	26¼	28½	18⅝	26½	22 1/16	34 11/16	29¼	47 5/16	17½	25	22	46½	3½	12
5½	22	28⅞	31½	20 7/16	29⅛	24¼	38 5/16	32	51¼	19¼	27½	24⅛	50¾	3½	14
6	24	31½	34¼	22 5/16	31 13/16	26½	41⅝	35	54¼	21	30	25⅝	53¾	4½	16
7	28	36¾	39¾	26	37⅛	30⅞	48 9/16	38½	60	26½	37	28⅜	60	5½	18
8	32	42	45½	29¾	42⅜	35 5/16	55½	44	64	28¾	42	30⅜	64	6½	20
9	36	47¼	51¼	33½	47 11/16	39¾	62 7/16	49	68	31¾	47	32⅜	69	8½	24
10	40	52½	56¾	37 3/16	53	44⅛	69⅜	54	85¾	34¾	52	40⅝	84½	8½	26
11	44	57¾	62½	40 15/16	58 5/16	48½	76 5/16	59½	90¼	38⅜	57½	42⅝	88½	8½	28
12	48	63	68	44⅝	63⅝	52 15/16	83¼	65½	94¼	41⅞	62½	44⅝	93½	10	30
13	52	68¼	73½	48⅜	68⅞	57⅜	90 3/16	70	98¾	45⅜	68	46⅝	97½	11	34

NIAGARA CONOIDAL (TYPE N) FANS



This Style for No. 3 to No. 6 Fans



This Style for No. 7 to No. 13 Fans

OVERHUNG WHEEL
FULL HOUSING—DOWN DISCHARGE
Dimensions in Inches

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	X	Y
3	12	15¾	17¼	11 3/16	15 7/8	13¼	20 13/16	18	32¼	11¼	3	14 7/8	31 3/8	3½	8
3½	14	18 3/8	20	13	18 9/16	15 7/16	24¼	20¾	36 9/16	13	3¾	16 3/8	34½	3½	9
4	16	21	22¾	14⅞	21 3/16	17 5/8	27¾	24	40	15	4¾	18 3/8	38¾	3½	10
4½	18	23 5/8	25¾	16¾	23 7/8	19 7/8	31¼	26 5/8	43¾	16¾	5½	20½	43½	3½	11
5	20	26¼	28½	18 5/8	26½	22 1/16	34 11/16	29¼	47 5/16	17½	6¼	22	46½	3½	12
5½	22	28 7/8	31½	20 7/16	29⅛	24¼	38 3/16	32	51¼	19¼	7¼	24⅛	50¾	3½	14
6	24	31½	34¼	22 5/16	31 13/16	26½	41 5/8	35	54¼	21	8	25 3/8	53¾	4½	16
7	28	36¾	39¾	26	37⅛	30 7/8	48 9/16	27	60	26½	50 9/16	28 3/8	60	5½	18
8	32	42	45½	29¾	42 3/8	35 5/16	55½	32	64	28¾	57½	30 3/8	64	6½	20
9	36	47¼	51¼	33½	47 11/16	39¾	62 7/16	34¾	68	31¾	64 7/16	32 5/8	69	8½	24
10	40	52½	56¾	37 3/16	53	44⅛	69 3/8	38½	85¾	34¾	71 3/8	40 5/8	84½	8½	26
11	44	57¾	62½	40 15/16	58 5/16	48½	76 5/16	42	90¼	38 3/8	78 13/16	42 5/8	88½	8½	28
12	48	63	68	44 5/8	63 5/8	52 15/16	83¼	46	94¼	41 7/8	85¾	44 5/8	93½	10	30
13	52	68¼	73½	48 3/8	68 7/8	57 3/8	90 3/16	49½	98¾	45 3/8	93 3/16	46 5/8	97½	11	34

1-15—15M.